THE ORCHID ALBUM.

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THE

ORCHID ALBUM,

MISSOURI
BOTANICAL
GARDEN.

COMPRISING

COLOURED FIGURES AND DESCRIPTIONS

OF

NEW, RARE, AND BEAUTIFUL

ORCHIDACEOUS PLANTS.

CONDUCTED BY

ROBERT WARNER, F.L.S., F.R.H.S.,

AUTHOR OF SELECT ORCHIDACEOUS PLANTS,

AND

BENJAMIN SAMUEL WILLIAMS, F.L.S., F.R.H.S.,

AUTHOR OF THE ORCHID-GROWERS' MANUAL, ETC.

THE BOTANICAL DESCRIPTIONS BY THOMAS MOORE, F.L.S., F.R.H.S.,

CURATOR OF THE CHELSEA BOTANIC GARDEN.

THE COLOURED FIGURES BY JOHN NUGENT FITCH, F.L.S.

VOLUME V.

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DEDICATED

BY SPECIAL PERMISSION

TO

H.R.H. The Princess of Wales,

BY

HER ROYAL HIGHNESS'

Very obedient and humble Servants,

ROBERT WARNER,

BENJAMIN S. WILLIAMS.

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J.Nugent Fitch del.et lith.

CATTLEYA MAXIMA BACKHOUSEI.

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CATTLEYA MAXIMA BACKHOUSEI.

[Plate 193.]

Native of Peru.

Epiphytal. *Stems* short, plump, club-shaped, of a pale green colour. *Leaves* light green, thick, firm, rather erect, oblong, emarginate. *Peduncles* stout, issuing from a short oblong compressed sheath, and supporting a short corymbiform raceme of four to five closely set blossoms. *Flowers* of a particularly bright lilac-rose or dilute magenta, uniform in tint except as to the veining of the lip; *sepals* linear-lanceolate, plane, entire at the margin, scarcely paler than the petals, two and a half inches long; *petals* oblong, plane and cuneate at the base, slightly frilled near the apex, deep lilac-rose, moderately spreading, nearly three inches long; *lip* with a thick claw, the basal lobes folded so as to meet over the column, of which they are twice the length, the front edge prettily frilled throughout, and meeting over the mouth of the tubulose portion; throat yellow within, marked with magenta lines to the base, the yellow colour extending forwards along the central line as far as the mouth in one broadish pale yellow stripe, the rest of the limb and the front portion of the tube beautifully veined with deep magenta on the lighter magenta ground, the veins becoming paler near the margin, and vanishing before reaching it. *Column* semiterete, about half as long as the tubulose part, greenish white, with two laterally curved lobes bending over the anther bed.

Cattleya maxima Backhousei, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xix., 624; *Williams, Orchid Grower's Manual*, 6 ed., 190.

We have now the great pleasure of figuring a most beautiful form of *Cattleya maxima*, differing from the original type not only in its brilliant colour and in the form of its noble blossoms, but also in the shortness of its fleshy stems. It was at one time a very rare plant, but it has of late been imported both in large and small masses, and there is little doubt that these may include several varieties differing more or less in colour from that which forms the subject of our plate. All that we have seen have, however, been well worthy of cultivation; even the old form of *C. maxima* has flowers of a beautiful pink colour, with the lip finely veined.

Our drawing of the fine variety named after Messrs. Backhouse & Son, of York, was taken from a specimen in the collection of R. J. Measures, Esq., of Cambridge Lodge, Camberwell, who is forming a good collection of Orchids, and whose son also takes a great interest in these plants.

Cattleya maxima Backhousei is a dwarf compact evergreen plant, having pale green stems and foliage, in which peculiarities it is distinct from all others. The sepals and petals are of a light magenta, and the lip is of the same ground colour, but distinctly veined with deep magenta-purple. It blooms after the growth is

completed, from a sheath at the top of the just matured stem, the flowers being produced during the winter and spring months, and continuing in beauty for two or three weeks. This variety comes from Peru.

We find this plant to do well at the warm end of the Cattleya house, where it should be placed as fully in the light as possible, with but little shade, merely sufficient to keep the bright sun from scorching its foliage. It will thrive well in baskets, or equally well in pots, suspended from the roof, and also when placed on the stage where there is plenty of light. It requires good drainage, which may be secured by filling the pot three parts full of crocks, and placing some sphagnum moss over them to keep them from getting clogged. This is one of the chief objects, namely, to secure perfect drainage, so that the material does not get in a sour or unhealthy state. If the soil is allowed to go bad, that is to get into a stagnant soddened condition, the plants often suffer through the decay of the roots, which causes the stems and buds to shrivel, and when that is the case the plants often dwindle away, or, if not, they take a considerable time to bring them back into a healthy state. If this unhealthy condition should unfortunately overtake any of the plants, it is the wisest plan to take them out of the soil and wash their roots, after which they may be placed in fresh material in a shady part of the house, until they begin to plump up and make fresh roots, and then they may be put nearer the light.

These instructions apply to all Cattleyas when they get into a bad state. Take care, however, not to rub the leaves or bulbs, but should any insects have appeared, be very careful of the plants in removing them.

The best material for potting we find to be rough fibrous peat, and live sphagnum moss; or they will do in either. We prefer a few lumps of charcoal mixed with the other material, as it helps to keep it open, and more free for the moisture to pass away; besides which, the plants will be greatly benefited by the material being kept sweet, which the charcoal will aid in doing.

Lælia Canhamiana.—This new and beautiful hybrid was exhibited by the Messrs. J. Veitch & Sons, of Chelsea, on June 9th, at the Royal Horticultural Society, and on June 17th at the Royal Botanic Society's Show, at each of which it received a First Class Certificate. We believe it is a mule between *Cattleya Mossiæ* and *Lælia purpurata*. It is a wonderful cross, partaking of the foliage of the *Cattleya* and flowers of the *Lælia*. We hear that this hybrid has taken several years to bring it into a flowering state, and it now indicates that it will be a free-blooming plant. The sepals and petals are white and broad, standing well out, and the lip is broad, of a bright magenta-purple colour, edged with white, the throat orange, beautifully veined with reddish brown.—B. S. W.

J.Nugent Fitch del.et lith.

ODONTOGLOSSUM HEBRAICUM.

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ODONTOGLOSSUM HEBRAICUM.

[Plate 194.]

Native of United States of Colombia.

Epiphytal. *Pseudobulbs* elongate ovate, compressed, diphyllous, with several accessory leaves investing their base. *Leaves* elongate ligulate-oblong acute, keeled, eight to ten inches long, of a bright green colour. *Scapes* radical, from the axils of the accessory leaves. *Flowers* large, upwards of three inches in breadth and depth, the sepals and petals stellately spreading, very pale yellow, heavily spotted with chestnut-brown; *sepals* (dorsal) ovate-lanceolate acuminate, narrowed to the claw-like base, undulated at the edges, the lateral ones similar, yellow, the centre of the lower half with an oblong blotch of numerous moderate-sized chestnut-brown spots and striæ, irregularly disposed; *petals* also ovate-lanceolate, more elongately acuminate, narrowed to the base and wavy, having two small brown stripes at the base, otherwise of the same colour as the sepals, but the markings are rather smaller and more regularly disposed though occupying about the same area; *lip* hastate, the base deeper yellow, and marked with several short radiating lines of crimson, the front part undulated and acuminate, with two or three large spots near the centre, and two smaller ones near the apex. *Column* short, semiterete, marked with chestnut-brown on the inner face, and furnished with two small angular wings.

Odontoglossum hebraicum, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xi., 462.

The Odontoglots, which are already very numerous, are becoming more so every day, and they are generally welcomed by growers of Orchids. There are so many natural hybrids amongst the plants we are receiving year by year from the various localities, that we must suppose the insects are doing a great work in their native habitats, where there is ample scope for it. There is scarcely an importation now received, which does not bring some novelty to our notice. The seed no doubt germinates more freely there, in their native haunts, as may be inferred from the large importations that are continually coming into this and other European countries, and the supply seems to increase year by year. One would think the supply would get exhausted, but the extent of ground which the plants inhabit and the millions of seeds which are scattered by the wind to different localities combine to keep the places of those that are brought away by our collectors continually replenished. We cannot think without regret of the quantities that have been lost on their way to Europe; but of late years our assiduous collectors have been more fortunate in getting them across the seas alive, in consequence, no doubt, of the means of transit being more rapid, and the packing better understood and more expeditiously carried out. These conditions all combine to make it easier to get the plants over alive.

The subject of our present figure is probably a natural hybrid, related to *O. Andersonianum.* Our sketch was taken from a specimen in the far-famed collection of Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking. *Odontoglossum hebraicum* is an evergreen plant, the foliage and pseudobulbs being of a pleasing green colour. The flowers proceed from the base of the bulbs on scapes some foot or more in length, after the growth of the pseudobulbs has been completed, and are, as will be seen, of a strikingly showy character, and borne in panicles. The sepals and petals are pale yellow, distinctly spotted in a curious hieroglyphical manner with chocolate-brown, and the lip is of the same colour, with three or four irregular blotches in the centre. It continues in bloom for several weeks during the winter and spring months.

This plant requires the same cool treatment as *O. crispum (Alexandræ),* being potted in similar material, and in like manner kept well supplied with moisture, the soil being, of course, thoroughly drained, so that the water does not stagnate about the roots.

Cattleya Wageneri.—At a meeting of the Royal Horticultural Society, on June 9th, Sir Nathaniel de Rothschild, of Tring Park, exhibited, from his fine collection, a wonderful specimen of this scarce and grand *Cattleya,* bearing twenty of its splendid flowers fully expanded. It formed a grand feature of the meeting, with its snowy white sepals and petals, and its broad lip of a charming lemon-yellow edged with white. It is a grand acquisition to our *Cattleyas,* and, although it has been shown for many years, it was generally seen in the form of small plants. In consequence of its rarity it has been cut up to increase the number of plants. The Messrs. Sander & Co. have been fortunate enough to import a few fine masses, and the specimen exhibited on this occasion was from the same collector, and does Mr. Hill, of Tring Park Gardens, great credit for bringing it out in such perfection. The plant was deservedly awarded a Cultural Commendation. —B. S. W.

BARKERIA ELEGANS.

Nugent Fitch del et lith.

B.S.Williams Pub

BARKERIA ELEGANS.

[Plate 195.]

Native of Mexico.

Epiphytal. *Stems* erect, leafy, clustered, terete, fusiform, narrowed to the base, and also upwards into the peduncle, sheathed by the leaf-bases. *Leaves* sub-distichous, remote, light green, oblong-lanceolate acute, with a sheathing base, deciduous. *Peduncles* terminal, being a tapered continuation of the young stems of the current growth, slender, blotched with purple, and having long sheathing green bracts, supporting a short raceme of three to five flowers of a showy character. *Flowers* two and a-half inches across, of a delicate blush rose, deeper on the outer surface, the lip bearing at the tip a large blotch of the richest purple-magenta; *sepals* lanceolate acute, spreading, blush-lilac inside, deeper rose outside; *petals* similar in colour, but broader and more ovate; *lip* large, broadly obovate, obtuse, mucronulate, nearly one and a-half inch long, the sides indented, white, covered along the centre in the lower part by the fleshy appressed column, which lies over an oblong callus ending in three elevated lines, and beyond which, on the exposed part, is a sub-quadrate blotch of the richest purple-magenta extending nearly to the apex, but having a distinct narrow border of white. *Column* petaloid, spathulate, bent down upon the lip, conspicuously dotted with crimson-purple, yellow at the tip.

Barkeria elegans, *Knowles and Westcott, Floral Cabinet*, ii., t. 49; *Botanical Magazine*, t. 4784; *Flore des Serres*, t. 959; *Illustration Horticole*, t. 23; *Pescatorea*, t. 10; *Floral Magazine*, 2 ser., t. 394.

This small genus of Orchids is now less frequently seen or grown than it should be, though we do, indeed, occasionally meet with one or other of the species at our floral meetings and exhibitions. As, however, we are now getting more considerable importations of them, it is to be hoped that they will the oftener make their appearance, both on the stage at home and abroad at the exhibitions, as they are amongst the finest of our cultivated Orchids. No doubt the reason why we have not very often seen them is because they are deciduous in habit, and on that account they often get so far forgotten as not to be attended to at the proper time; but where due attention is bestowed upon them they will repay all the trouble that is taken with them.

The species which we now figure is one of the most beautiful, and one which we flowered successfully many years ago. Other growers were also more fortunate with these plants in those days than they are now; but, of course, there are now so many additional species of Orchids cultivated, that attention is rather drawn away from these. We, however, hope that by introducing illustrations of them to

our readers, we may be the means of exciting more interest in them, and securing for them more attention. We are indebted for the materials which served for the preparation of our drawing to F. A. Philbrick, Esq., Q.C., Bickley, Kent, in whose fine collection Barkerias are well cultivated. Mr. Philbrick himself takes great interest in them, and the gardener, Mr. Heims, pays them such attention that they always flower well under his care.

We cannot perhaps do better than here refer our enquiring readers to Mr. Philbrick's remarks given under Plate 148 of our fourth volume, where he speaks of the cultivation of these plants; and if his teaching be followed, others, no doubt, will be as successful as he has been. The present subject requires the same treatment as that which is there explained. *Barkeria elegans* is a deciduous plant, losing its leaves after it has finished its growth and completed its flowering. The plant forms upright slender stems, with light green foliage; the flower scapes proceed from the top of the stem. The sepals and petals are of a delicate blush-lilac, and the lip is white, with a large deep magenta blotch on the fore part. It blooms during February and March, and lasts for some time in beauty.

Odontoglossum vexillarium, at Pickering Lodge, Timperley, the residence of G. Hardy, Esq.—It gives us pleasure to be able, from time to time, to report on any plants out of the ordinary way that we may chance to fall in with. We may say of Mr. Hardy's plants of *Odontoglossum vexillarium* that we never saw any in a more vigorous state of growth—they are perfection itself. The pseudobulbs and foliage are broad and of firm texture, with a most beautiful colour on some of them. There are eighty plants, which will shortly be in bloom, and these are producing 1,037 flower scapes; when these are fully open they will produce a gorgeous spectacle worth going from London to witness. They are grown on a stage, one shelf above the other, at the end and on one side of a large span-roofed house, so that their beauties will be fully displayed, and the different shades of colour shown to advantage, for of course among such a quantity there will be great variety. Mr. Hardy told us that there are amongst them many finely coloured forms, as well as the large white-lipped sort, which will contrast well with the darker colours. The effect of so many hundreds of blossoms out at one time, the foliage also being remarkably fine, will be grand in the extreme. We noticed that they were all growing in small pots, and all formed natural specimen plants, not jammed together to form what is sometimes called a "specimen"; but they are just as they have been grown, so that every one who sees them can judge of the skill which has led to such magnificent results.—B. S. W.

J. Nugent Fitch del. et lith.

CYPRIPEDIUM SCHRÖDERÆ

F. S. Williams Pub.r

CYPRIPEDIUM SCHRÖDERÆ.

[Plate 196.]

Garden Hybrid.

Terrestrial. *Stems* short, bearing a tuft of deep green foliage below, and a branched inflorescence above. *Leaves* a foot long or more, strap-shaped, taper pointed, and spreading. *Scape* or *Flowering stem* taller than the leaves, branched, densely pubescent, bearing about five large and highly coloured flowers, with compressed glabrous semi-ovate spathaceous subfalcate bracts, becoming smaller upwards, greenish, blotched with purple. *Flowers* large, solitary, very distinct in aspect; *sepals* (dorsal) ovate, two inches long and an inch broad, downy on both surfaces, flushed with rose and faintly veined with olive-green, the central and stouter veins tinted with rose, the lower one broadly ovate obtuse concave; *petals* deflexed, about four inches long, half an inch broad at the base, tapering gradually to a long narrow point, of a purplish rosy hue, deeper outside, and becoming paler inside near the base, ciliate at the edge, hairy inside at the base especially on the lower side, the hairs deep purple; *lip* large, an inch broad and nearly two inches long, oblong, very obtuse, the opening about an inch deep, dark purplish rose or dull crimson, somewhat veiny with deeper rose, the anterior edge crenulate, the broadly infolded fleshy edges creamy white, with brown spots, the inner surface white spotted with rose, and covered with short stiff hairs. *Staminode* fleshy, transversely oblong, with a short claw, the front edge with a central apiculus, where it is recurved against the tongue-shaped lower portion, creamy white, with a whisker-like fringe of deep purple hairs behind, and on the lower side a fleshy bluntly-triangular process having its upper surface hollowed out, and set thickly on both surfaces with short stiff hairs.

Cypripedium Schröderæ, *Reichenbach fil.*, in *Gardeners' Chronicle*, xix., 432; *Williams, Orchid Grower's Manual*, 6 ed., 256.

We now introduce to our readers one of the many hybrid forms of *Cypripedium* that have been raised within the past few years, and amongst which there are many fine subjects that will be real acquisitions to our collections. The Lady's Slippers are very useful for the bright colours of their flowers, and also for their lasting qualities; moreover, most of them are easily cultivated. The one we now illustrate is a great improvement on any of the previous forms of the *C. longifolium* section; others have been raised that were improvements on those we formerly had, but *C. Schröderæ* is far in advance of them all, and is no doubt a grand acquisition. It was raised by Mr. Seden, in the Nurseries of Messrs. J. Veitch & Sons, who have been very successful in producing many new and distinct hybrid forms. Some account of the experiments carried out in this establishment are referred to in the very elaborate paper read by Mr. Harry J. Veitch, at the Orchid Conference held at

South Kensington, on May 13. Mr. Veitch's remarks on the Hybridisation of Orchids were exceedingly interesting, especially to those who are fond of experiments of this kind, at which many other growers are now trying their hands with very successful results. The beautiful novelty we now figure is named in honour of the Baroness Schröder, and we are indebted to Baron Schröder, of the Dell, Staines, for our drawing of it, our artist having been permitted to make his sketch from the original plant which now has its home in this very fine collection.

Cypripedium Schröderæ is an evergreen Orchid, with long gracefully spreading foliage of a light green colour. The flower stem proceeds from the centre of the young growth, and bears several large handsome blossoms. The dorsal sepal is of a pale yellowish hue, tinged with dull red, the petals dull crimson lighter towards the base, and the lip dull crimson, densely spotted in the interior. It blooms in December, and continues flowering for some time.

Mr. Ballantine grows this plant in the same manner as we have recommended for *Cypripedium calurum*, at Plate 136 (vol. iii.) of the *Album;* it is also propagated in a similar way.

Masdevallias at Sandringham.—We have received a splendid assortment of these showy flowers from Mr. C. Penny, gardener to H. R. H. the Prince of Wales, at Sandringham, where these plants are well cultivated, as is attested by the vigour of the cut flowers sent, which must have been produced on well-grown plants. The colours were brilliant, and the flowers not only of large size but also of stout substance. There were several varieties of *M. Harryana*, especially *magnifica*, of a bright magenta-crimson, while others of the varieties were bright shades of crimson, scarlet, and various other colours. There was also a fine flower of *M. Veitchiana grandiflora*, with its bright orange, scarlet, and yellow hues, the scarlet being flushed with purple. These are most useful plants to cultivate, as they are free-growing, and will endure cool treatment; besides which they afford colours that are required amongst our hundreds of the white *Odontoglossum crispum (Alexandræ)*, &c., and by intermixing them, as Mr. Penny does, they form a most effective picture.—B. S. W.

TRICHOPILIA LEPIDA.

TRICHOPILIA LEPIDA.

[Plate 197.]

Native of Costa Rica.

Epiphytal. *Pseudobulbs* oblong obtuse compressed, dark green, two inches high, invested by a few ovate acute scales, about as long as the bulbs. *Leaves* solitary, obovate-oblong or ligulate acute, channelled, leathery, dark green. *Peduncles* deflexed, with ovate lanceolate boat-shaped sheathing bracts, from the upper of which the flowers emerge. *Flowers* about four-and-a-half inches in expansion, with starry sepals and petals, and prominent fimbriated lip; *dorsal sepal* two-and-a-half inches long, linear lanceolate acute, erect, pale wine-red or rosy lilac, with a narrow irregular border of white; the *lateral* ones directed downwards, about the same length, but united at the base for about three-fourths of an inch, the free portion slightly divergent, strongly and bluntly keeled behind, the colouring similar; *petals* about the same length, bluntly keeled behind at the base, linear-lanceolate, very slightly broader than the sepals, of a rather deeper rose the colour breaking into spots, the irregular white border broader and more distinct; *lip* two-and-a-half inches long, the basal half inch folded up close over the column and claw-like, the front portion one-and-a-half inch broad, quadrate-oblong, three-lobed, the lateral lobes broad, erect, rounded, undulated, with a bright purple-crimson throat, the central lobe deeply parted into two broad rounded undulated segments, the whole central area being of a deeper purplish rose, and having a broad irregular edging of white, more or less blotchy inwards. *Column* reaching just beyond where the lobes expand to display the throat, terete below, green at the base, the upper projecting end white, with a broad three-lobed fimbriated hood.

Trichopilia lepida, *Hort. Veitch; Floral Magazine*, 2 ser., t. 98; *Gardeners' Chronicle*, N.S., ii., 779.

In this small genus of Orchids the formation of the flowers is very curious, and the way in which the plants send forth their blossoms is also peculiar. There are several distinct species, most of which are beautiful objects when in blossom. Amongst the more striking of these we may mention *T. crispa*, *T. tortilis*, *T. suavis*, and *T. coccinea*, but the one of which we now submit a figure is the most charming of them all. It produces its flower spikes from the base of the pseudobulbs in great profusion, and the flowers, neatly overhanging the pot, give the plant a most charming appearance, as, indeed, may be to some extent realised by the accompanying plate. The various species all grow in the same way. We are indebted to H. Shaw, Esq., of Corbar, Buxton, for the specimen we have here pourtrayed, the plant having bloomed several times in his collection. We ourselves have seen but a few specimens of this grand species.

Trichopilia lepida is a dwarf evergreen epiphyte whose dark green pseudobulbs are about two inches in height; it, moreover, has dark green leaves, which grow about six inches high. The flowers proceed from the base of the pseudobulbs, growing on scapes some six inches in length, and have a very pretty appearance ranged just outside the foliage; the sepals and petals are of a dull wine-red, broadly and irregularly margined with white. The species blooms in April and May, and the flowers last for about two weeks in beauty.

The species of *Trichopilia* all require similar treatment. They may either be grown in pots or baskets, and should be suspended from the roof, where they may get all the light and yet be shaded from the burning sun. A little sunshine morning and evening will benefit them, provided the blinds are kept down during the hottest part of the day. They are naturally found growing on trees, where they get the full benefit of the light and yet are partially shaded; they also get the full benefit of the breezes, and of the rains, and dews that fall during the night. The nearest approach that we can make to these natural conditions is to suspend them from the roof, where they get a full share of the air and moisture they require during their growing season, which is after they have finished blooming. This is the time they specially require attention. As soon as the buds are seen to be starting afresh, they should be repotted, or have some new top-dressing given them; this new and sweet material will encourage the roots to work more freely.

We have found the best material for potting them to be rough fibrous peat, with a few lumps of charcoal mixed with the peat; they must also have good drainage. We have seen them thrive well in good live sphagnum moss. The plants require to be kept rather moist at the roots during their period of growth, but they do not like overwatering at any time; but when they have completed their growth less water will suffice, just sufficient being given to keep them plump. When they begin to show flower they require more moisture, in order to assist the blossoms in attaining a finer development. With this help during their blooming period they will be enabled to put forth flowers of a larger size and of a finer colour and substance than would otherwise be the case. Many plants have their blossoms spoiled by not having a little extra attention and help at this critical time.

We have been accustomed to grow these plants in the Cattleya house, which has always proved satisfactory. They are propagated by dividing the pseudobulbs, leaving young growths in front and two or three bulbs at the back. This operation is best performed just as the plants are starting to grow: moreover, it is a good plan to cut them asunder, and to leave them for a time without further disturbance. Later on they should be divided and put into small pots, placing them in a shady place until they begin to establish themselves, and afterwards removing them so that they are near the light. They must be kept free from insects, or their cultivation will not be successful.

B.S.Williams Publ.r

DENDROBIUM HILLII.

[Plate 198.]

Native of Queensland.

Epiphytal. *Stems* elongate, jointed, the joints three to four inches long, terete, cylindrical, many-furrowed. *Leaves* four to six, elliptic or oblong, thick coriaceous, deep green, nerveless. *Peduncle* stout, terminal, supporting a nodding raceme a foot long and upwards of four inches across. *Flowers* very numerous and densely packed, with a minute ovate bract at the base of each pedicel, which is one-and-a-half inch long, creamy white, with a very short ovary at top; *dorsal sepals* lanceolate from a broad base narrowing to the point, seven-eighths of an inch long; the *lateral* ones falcato-decurved acute, the base so expanded as to form a broad mentum or chin; *petals* rather shorter than the sepals, linear, drawn out into a subulate point; *lip* with a divergent claw, bearing a yellowish purple speckled boss, then suddenly folded back (geniculate) so that the blade lies parallel with the column and petals, curved, oblong, with the sides erectly infolded, and marked with short transverse papillose lines of chocolate-purple, three-lobed, the front lobe reniform when laid out flat, striated mostly on the outer side, the side lobes oblong, curved, marked with lines as above noted, a single raised line forming a central blunt longitudinal ridge or crest, widening in the middle, yellow flushed with purple. *Column* concave, broad at the base, narrowed upwards, the sides thickened and incurved, white, covered with an irregular chocolate-purple blotch on the inner face.

Dendrobium Hillii, *Hooker, Botanical Magazine*, t. 5261.

We have now to record one of our older Orchids, and one that is well known to growers generally, indeed, this *Dendrobium Hillii* has been cultivated in many establishments where few other Orchids have been grown. It is a really noble plant, especially when well cultivated, as we have had the pleasure to witness when inspecting specimens with many spikes of its charming racemes proceeding from the strong growing pseudobulbs. We have seen the plants three feet across, and they may be managed without much trouble if they get the proper management. They require cool treatment, and may be grown in any conservatory or greenhouse. Our plate was prepared from a drawing taken from a well-grown specimen in the fine collection of J. Buchanan, Esq., Oswald Road, Morningside, Edinburgh.

Dendrobium Hillii is an evergreen species with cylindrical jointed stems, eighteen or more inches in length, bearing several short dark green leaves. The racemes of flowers proceed from the upper part of the matured stems, and grow to the length of twelve or more inches; the flowers are cream-coloured, the lip being slightly spotted with purple. It flowers during the winter months, and lasts several

weeks in beauty if the flowers are kept free from damp. It is of Australian origin.

This *Dendrobium* is in the way of *D. speciosum* as regards its habit, and it requires the same treatment, that is, a good season of growth, and then to be kept nearly dry at the roots until it shows signs of flowering, which will be after the bulb-stems are perfected. The plants must be grown vigorously in order to develope their flowers, but when they once get into a flowering condition they will bloom freely—that is, of course, if grown well—every year, and under these conditions it will well repay all the care which may have been bestowed upon it.

We have seen this Dendrobe grown in many different ways—amongst others, in glazed pits, with just a little heat in winter from one small pipe, and in summer placed in a warm part of the garden, where it may have the full benefit of the sunshine in July and August, replacing it later on in the cool house or under glass of some kind. This plant should have the full benefit of the light and sun, and of a free circulation of air during summer, in order that the stems may be well ripened and matured. It requires a good sized pot, with ample drainage and a compost of rough fibrous loam and peat, with a liberal supply of water at the roots while in a vigorous state of growth. We have not seen it better grown than in this case by Mr. H. Grossart, gardener to Mr. Buchanan, who takes great interest in plant culture.

This species is propagated by dividing the stems when in full health, and this should be done just when they are starting to grow.

Oncidium crispum grandiflorum.—We have received some very fine flowers of this plant from Mr. J. Routledge, gardener to E. L. Wood, Esq., Freelands, Perth. They were magnificent, the finest we have seen of this grand variety, both as regards size and colour. They were cut from a small plant that had been in flower for six weeks. Each blossom was nearly four inches across, with the sepals and petals of a rich bronzy brown colour, and the lip of the same colour, having the upper part bright golden yellow, and spotted round the yellow with crimson. The flowers were most showy, much the best that have come under our notice, and the owner must be considered fortunate in possessing so fine a variety.—B. S. W.

LÆLIOPSIS DOMINGENSIS

LÆLIOPSIS DOMINGENSIS.

[Plate 199.]

Native of St. Domingo.

Epiphytal. *Pseudobulbs* somewhat small, tufted, oblong, compressed, marked by the scars of fallen bracts or scales. *Leaves*, two at the apex of the bulb, oblong obtuse, fleshy, sheathing at the summit of the bulbs. *Scape* terminal, slender, purple, branched, the branches forming a panicle of flowers, which are of a pleasing colour, and venosely-striate. *Flowers* about two and a half inches across, rosy lilac, conspicuously veined with purple; *sepals* narrow lanceolate acuminate, and as well as the ovate acuminate somewhat wavy *petals*, of a pretty rosy lilac colour: *lip* obovate emarginate, the base folded up in the form of a tube, pale yellow within, the tubulose portion traversed by raised hairy veins, the central of which are brownish yellow, and the rest purplish, the front portion spreading, an inch broad, the edges undulated, the surface deeper rosy lilac, marked throughout by crowded purple lines. *Column* clavate, semiterete, less than half the length of the sepals, slightly incurved, the membraneous margin very narrow.

Læliopsis domingensis, *Lindley* in *Paxton's Flower Garden*, iii., t. 105.

Cattleya domingensis, *Lindley, Genera and Species of Orchidaceous Plants*, 118; *Id. Botanical Register*, 1844, under t. 5.

Broughtonia lilacina, *Henfrey, Gardeners' Magazine of Botany*, iii., 201, with tab.; *Lemaire, Jardin Fleuriste*, t. 172.

Bletia domingensis, *Reichenbach fil.* in *Walpers' Annales Botanices Systematicæ*, vi., 432.

This species of *Læliopsis* has been well known to us for many years. We have repeatedly flowered it, and have exhibited it at the old Chiswick shows, but of late years we have seldom seen it. These old favourites always possess a great charm for us, though we are equally delighted to see something which is altogether new, provided it is also good. Such subjects, indeed, are constantly making their appearance, but they should not lead us to forget or neglect our old floral friends.

We believe this *Læliopsis* is the only species known to cultivators. It is certainly a rare plant, and very distinct in its appearance, having a certain degree of resemblance both to the *Lælias* and the *Cattleyas*, but yet differing in its botanical characters from these two allied genera. Our drawing was taken from a plant in the collection of J. Day, Esq., High Cross, Tottenham, who is well known as one of our oldest, as well as one of our most enthusiastic lovers of Orchids.

Læliopsis domingensis is a dwarf evergreen species, with short pseudobulbs, of a light green colour, and with leaves also of a light green colour, four inches in

length. The scapes bearing the flowers proceed from the top of the pseudobulbs, between the two leaves by which they are surmounted, and are of a drooping branching character, bearing many very pleasing blossoms. The sepals and petals are of a light rose colour, the lip a brighter rose, striped with still darker veins, and the throat is yellow. It blooms during April and May, and lasts several weeks in a good condition. The plants come from St. Domingo, whence it takes its name.

This species will do either in a basket or on a block. If cultivated on a block or raft it requires more water, indeed, it must be watered daily in the summer months, when in vigorous growth. If grown in a basket it requires good drainage, with charcoal, and a small quantity of sphagnum or rough peat; moreover, it should be put into a small basket and hung up near the light, though a little sunshine will not do it harm, provided its scorching rays are kept from it. It requires to make a good free growth, and to secure this must have close attention during the active period of its life. We have found it to succeed when this care and attention have been given, but, otherwise, it has been a failure. When a suitable mode of treatment has been found, it is best to keep to it, and the same may be said as regards the part of the house in which it is placed, for many Orchids will succeed in one part of a house, and not in another. We find, by experience, that if a plant is moved from a part of the house which it likes, or, in other words, a part which suits it, that plant will go back. The same thing applies to a great many other plants as well as to Orchids. Experience and close observation are a great help in successful plant culture, and to find the best situation for the individual species is a most important thing. Though we have had long experience in plant culture, yet this latter is never learnt; there is always something to be found out respecting plant life. Cultivators too often think, that if they succeed with certain plants, they know everything, but it is a mistaken idea; the limit of our knowledge is never reached, and we think it adds much to the pleasure to be derived from plant-growing that we have continually some new experience to acquire. Therefore, we repeat, in looking after our pets, if it is found that a plant does not succeed in one part of a house, try it in different parts, or different positions, until it does do well. As regards this *Læliopsis*, we have always found it thrive well in the Cattleya house. It must be kept quite free from insects, and must not be cut about for propagating purposes, as it is one of those plants that does not like being disturbed. The material about its roots must be kept sweet, so that the roots may work about in it freely.

length. The scapes bearing the flowers proceed from the top of the pseudobulbs, between the two leaves by which they are surmounted, and are of a drooping branching character, bearing many very pleasing blossoms. The sepals and petals are of a light rose colour, the lip a brighter rose, striped with still darker veins, and the throat is yellow. It blooms during April and May, and lasts several weeks in a good condition. The plants come from St. Domingo, whence it takes its name.

This species will do either in a basket or on a block. If cultivated on a block or raft it requires more water, indeed, it must be watered daily in the summer months, when in vigorous growth. If grown in a basket it requires good drainage, with charcoal, and a small quantity of sphagnum or rough peat; moreover, it should be put into a small basket and hung up near the light, though a little sunshine will not do it harm, provided its scorching rays are kept from it. It requires to make a good free growth, and to secure this must have close attention during the active period of its life. We have found it to succeed when this care and attention have been given, but, otherwise, it has been a failure. When a suitable mode of treatment has been found, it is best to keep to it, and the same may be said as regards the part of the house in which it is placed, for many Orchids will succeed in one part of a house, and not in another. We find, by experience, that if a plant is moved from a part of the house which it likes, or, in other words, a part which suits it, that plant will go back. The same thing applies to a great many other plants as well as to Orchids. Experience and close observation are a great help in successful plant culture, and to find the best situation for the individual species is a most important thing. Though we have had long experience in plant culture, yet this latter is never learnt; there is always something to be found out respecting plant life. Cultivators too often think, that if they succeed with certain plants, they know everything, but it is a mistaken idea; the limit of our knowledge is never reached, and we think it adds much to the pleasure to be derived from plant-growing that we have continually some new experience to acquire. Therefore, we repeat, in looking after our pets, if it is found that a plant does not succeed in one part of a house, try it in different parts, or different positions, until it does do well. As regards this *Læliopsis*, we have always found it thrive well in the Cattleya house. It must be kept quite free from insects, and must not be cut about for propagating purposes, as it is one of those plants that does not like being disturbed. The material about its roots must be kept sweet, so that the roots may work about in it freely.

J.Nugent Fitch del. et lith.

B.S.Williams Publ

MILTONIA CANDIDA GRANDIFLORA.

MILTONIA CANDIDA GRANDIFLORA.

[Plate 200.]

Native of Brazil.

Epiphytal. *Pseudobulbs* ovate oblong, narrowed towards the apex, ancipitous, diphyllous, provided with accessory leaves at the base, and becoming of a yellowish tawny colour when old. *Leaves* oblong-ligulate acute, shorter than the scape, yellowish green. *Scape* erect, brownish purple, from the axil of an accessory leaf, bearing a raceme of several handsome flowers, which are brighter coloured than those of the type. *Flowers* three-and-a-half inches across, much finer than in *Miltonia candida*, white lipped; *sepals* oblong, with a cuneate base, the apex shortly acuminate, the margins irregular and wavy, bright chestnut-brown, the upper half edged with yellow; *petals* more elongate oblong, chestnut-red in the basal half, the tip (one-fourth) clear yellow, the rest marked with chestnut-red blotches on a yellow ground: *lip* roundish obovate, folded over the column, its margin undulated, and the disk marked with two oblong violet-purple blotches. *Column* included.

Miltonia candida grandiflora, *Hort.; Williams, Orchid Grower's Manual*, 6 ed., 410.

There are many most beautiful species and varieties of *Miltonia*, several of which we have figured. When grown as they should be they make a grand display. The one of which we now publish an illustration is a most charming subject when well cultivated, as was the case with the plant from which our figure was taken, which was admirably bloomed in the fine collection of R. H. Measures, Esq., Woodlands, Streatham, a gentleman who is collecting some exceptionally rare and fine species and varieties of Orchids. We may congratulate him on so doing, and repeat what we have said before, namely, that it is better to grow good known kinds than to waste valuable room in growing subjects which have to be got rid of on account of their inferiority after they have been receiving attention it may be for years. This remark especially applies where space is an object. Of course where large houses out of number are built, then the owner may reasonably go in for a large general collection, and indulge in extensive importations, as by doing so he will always have a chance of getting something new in the shape of varieties. The same chance occurs by continually making additions of any class or type that may be particularly admired or fancied; there will be a continued possibility of new species and new varieties turning up.

Miltonia candida grandiflora, which is a native of Brazil, is an evergreen Orchid, with pseudobulbs three inches in height, of a light green colour; the

foliage is about eight inches high, also of a light green colour; the flower stems or scapes proceed from the side of the bulbs, and bear an erect raceme of showy flowers; the sepals and petals are chestnut-brown, tipped and margined with deep yellow, and the lip is white, having a purple-lilac stain in the throat. It blooms in September, and lasts a long time in perfection.

This plant will do well in the Cattleya house, or at the cool end of the East India house. The *Miltonias* do not like too much sun. We always shade them when the sun's rays are powerful, letting them have all the light possible when the sun is on the decline. Pot culture suits them, or they will thrive in baskets suspended from the roof. We find good fibrous peat or live sphagnum moss to suit them if accompanied by good drainage, the pots being three parts filled up with potsherds or broken pots, covered with a layer of moss to keep them open. The plants do not at all like stagnant moisture about them.

The *Miltonias* begin to grow when the blooming season is past. This is the time to fresh pot them if they require it; if not, they will be benefited by giving them fresh material on the surface, a little of the old material being removed without disturbing the roots. They require a moderate supply of water during their period of vigorous growth when they are rooting freely, but when at rest, after their growth is finished, a less quantity will do, just sufficient to keep the surface a little moist. When they again begin to show signs of flowering, give them more water. They are propagated by dividing the pseudobulbs just as they show signs of growth.

The Manchester Whit-week Show at the Royal Botanic Gardens was a great success, and brought in over £700 profit. It has been our rule, since the *Album* was commenced, to give our readers a short description of this magnificent annual exhibition, and we trust it will interest them to know that this show is well kept up by the Council of the Royal Manchester Botanical and Horticultural Society, aided by the good judgment and assiduous perseverance of Mr. Bruce Findlay. While it is carried on with such spirit and good feeling, it will always find supporters. The show of Orchids this year was very grand; for, although we missed one or two of the great Orchidists, whose plants were unavoidably absent, there were fresh exhibitors in this section, so that, altogether, it was a grand show, there being plants enough to fill both sides of the long exhibition house. Our space now being exhausted, we must reserve till our next issue our usual notice of some of the best plants which were staged.

J. Nugent Fitch del. et lith.

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ODONTOGLOSSUM WILCKEANUM PALLENS.

ODONTOGLOSSUM WILCKEANUM PALLENS.

[Plate 201.]

Native of Colombia.

Epiphytal. *Pseudobulbs* ovate-oblong compressed, clustered, diphyllous, furnished with accessory leaves at their base. *Leaves* ligulate-oblong acute channelled, of a lively green colour. *Scapes* radical, issuing from the axils of the accessory leaves, and terminating in a stout drooping raceme of large showy blossoms. *Flowers* nearly four inches across, the parts spreading; *sepals* lanceolate acute, slightly undulated, the dorsal with a few marginal teeth, creamy white with a large hippocrepiform blotch of cinnamon-brown on the lower half, and an oblong blotch on the upper half, the tip very pale sulphur-yellow, the lateral ones somewhat falcately decurved; *petals* ovate acuminate narrowed to the base, furnished with several long prominent marginal teeth, creamy white with one large cinnamon spot towards the apex, and a few smaller ones below near the margin; *lip* about an inch long, oblong, rounded dilated and much undulated at the apiculate apex, the anterior part white, denticulate, with a largish cinnamon spot about the centre, the base yellow, the side lobes denticulate, and bearing one or two brown spots; disk yellow, hollowed out, marked with numerous radiating reddish brown lines, and decorated in the centre with three yellow clavate lamellæ, which are extended into two lengthened pointed white processes, bearing a sharp pointed tooth above, and on each side, just emerging from the throat, four subulate yellow crests. *Column* prominent, with a fringe of heteromorphous teeth opposite the stigma, the front part much stained with cinnamon-brown, the under part white.

Odontoglossum Wilckeanum pallens, *Reichenbach fil. MS.*

We have from time to time figured a goodly number of Odontoglots, which are acknowledged favourites amongst Orchid cultivators, since they are not only very beautiful, but easy to grow, and do not occupy much space. Many, indeed, that we have figured are amongst the most beautiful of their class, and novel varieties are continually making their appearance among the successive importations. The variety, or form, we now bring before our readers is one of the rarest and most beautiful, and one that will be sought after by those who are fond of this particular group, and who are on the look-out for fresh forms.

Our figure was sketched from a beautiful plant in the fine collection of J. Buchanan, Esq., Oswald Road, Morningside, Edinburgh, which bloomed very freely about May of the present year; this was a most admirably grown specimen, and did much credit to Mr. Grossart for the way in which it had been managed: we had, in fact, never seen a finer spike of flowers, and they were so beautifully arranged on both sides of the rachis, as to make it very effective.

Odontoglossum Wilckeanum pallens is a compact evergreen plant, growing about ten inches high, and of a lively green colour. The flower scapes proceed from the side of the bulbs, and bear a many-flowered raceme; both the sepals and petals are creamy white, blotched with chestnut-brown—in which respect it differs from *O. Wilckeanum pallidum*, which has spotless petals—and the lip is white, with a blotch of the chestnut-brown in the centre. This plant flowers in May and June, and lasts several weeks in beauty. It requires the same treatment as *O. crispum (Alexandræ)*, and should be grown in a pot with peat and moss, in a cool house.

Orchids at Manchester.—We proceed to fulfil the promise we made in our last number to notice the more important specimens of Orchids staged at the Whitsuntide Show:—A. Heine, Esq., Fallowfield, showed some magnificent specimens, and took most of the principal prizes. His *Cattleya Mossiæ* was three feet across, laden with flowers; *C. Mendelii* was equally good; *Odontoglossum vexillarium* three feet across, was laden with flower spikes, as was *O. Alexandræ*; and *Dendrobium Wardianum* was a wonderful mass, three feet across, and full of blossom. A splendid plant of *Lælia purpurata*, a grand variety, with twelve spikes, a mass of bloom, took the lead as the best single specimen Orchid in the Show; next this was a fine specimen of *Calanthe veratrifolia*, with many spikes of its chaste white flowers; *Dendrobium fimbriatum oculatum* also was fine, four feet across, bearing its bright yellow flowers in profusion. Mr. Heine besides these had many other meritorious plants. S. Walley, Esq., Fallowfield, showed some fine specimens, especially *Dendrobium fimbriatum oculatum*, with its bright yellow flowers; *Lælia purpurata*, with fine spikes; *Cattleya Mossiæ*, a fine variety, with richly-coloured lip, and several others equally good. R. F. Ainsworth, Esq., M.D., exhibited a wonderful mass of *Phalænopsis amabilis*, with over two hundred flowers, and a noble plant of *Vanda suavis*; also *Saccolabiums*, *Aërides Fieldingii*, and others. J. Broome, Esq., exhibited a grand specimen of *Dendrobium Devonianum*, with twenty-five spikes, bearing some hundreds of flowers, which stood on a pedestal, and produced a splendid effect; this is the way in which to show the flowers off to advantage. He also had a wonderful specimen of *Vanda teres*, three feet across, laden with its lovely blossoms. Next this was *Epidendrum prismatocarpum*, with its prettily spotted flowers. John Haywood, Esq., of Stretford, showed some good plants of *Dendrobium thyrsiflorum*, with many spikes of its bright yellow and white blossoms; also the curious *Cypripedium caudatum*, well bloomed, and a well-flowered plant of *Odontoglossum Roezlii*.—B. S. W.

(Continued under Plate 202).

Nugent Fitch del.et lith

B.S.Williams Publ.r

CYRTOPODIUM PUNCTATUM.

CYRTOPODIUM PUNCTATUM.

[Plate 202.]

Native of the West Indies, Mexico, and Brazil.

Terrestrial. *Stems* cylindrical, slightly compressed, three feet high, or more, leafy at top, and covered below with sheathing bracts, which leave annular scars on the surface when they fall away. *Leaves* six or eight from the upper portion of the stem, curving, linear-lanceolate attenuately acuminate. *Scape* tall, erect, springing from the base of the stem, three to four feet high, terminating in a dense corymbosely branched panicle, spotted with purple-brown, and having at the ramifications lanceolate acuminate wavy bracts, which are yellowish green, thickly marked with transverse bars of brown, similar to the markings on the back of the sepals and petals. *Flowers* numerous, about two inches across, exceedingly attractive from the profusion in which they are produced; *sepals* spreading oblong-lanceolate wavy, yellow, closely barred with bright chestnut-brown, the outer surface similarly but more faintly barred on yellowish green ground; *petals* oblong obtuse, slightly wavy, clear bright yellow, with a few pale red spots in the central part, and more numerous smaller ones at the base; *lip* with an angularly bent claw, deeply three-lobed, yellow, the two lateral lobes obovate cuneate incurved, with a broad crimson margin, the middle one broadly obcordate, emarginate undulated, having the margin dotted with crimson, and closely tuberculate, the disk slightly dotted, and banded with purple, and having a crest of pale yellow granules collected into a circle in the centre. *Column* yellow-green, produced between the two basal sepals.

Cyrtopodium punctatum, *Lindley, Genera and Species of Orchidaceous Plants*, 188; *Id. Sertum Orchidaceum*, t. 12; *Hooker, Botanical Magazine*, t. 3507.

Epidendrum punctatum, *Linnæus, Species Plantaram*, 1349.

We are much gratified to have the opportunity to figure this noble plant, for we may safely assert that it is one of the most noble of Orchids when it is grown into a fine specimen, in which condition we have seen it exhibited in former years, now long ago. We are glad, however, to be able to state that the Orchid growers of the present day are beginning to realise that this grand species is worthy of attention. Since the drawing was made, from which our figure is taken, we have seen another wonderful specimen, with branching flower spikes, more than four feet high, bearing one hundred and seventy-five expanded flowers, forming a magnificent panicle! This was grown in the collection of E. J. Partington, Esq., Heaton House, Cheshunt, Herts, under the care of Mr. Searing, the gardener, who had brought this plant to a high degree of perfection. Our readers must, from its portrait, judge for themselves whether this Orchid is worth growing or not. It may attain to a greater height than some other subjects, but it is quite worthy of the

space it occupies. It is sometimes rather shy blooming, but if it gets the proper treatment, and one waits until it is strong enough, there is no difficulty in inducing it to blossom. Like most other subjects it requires good cultivation to secure the highest results—indeed, without this, such results cannot be expected; but with patience and perseverance many difficulties may be overcome with it, as well as with many other plants.

Our drawing was taken from a noble specimen belonging to His Majesty the King of the Belgians, off which we had two fine panicles sent us by Mr. Henry Knight, Director of the Royal Parks and Gardens at Laeken, where His Majesty is forming a collection of Orchids and other plants. We have previously referred to this fine specimen of *Cyrtopodium* in our notes under Plate 189.

Cyrtopodium punctatum has tall fusiform stems that grow over three feet high, with foliage of a Palm-like character at the top, and has a noble presence when decorated with its panicles of many blossoms, which grow up at the same time as the young leafy stems, on distinct scapes proceeding from the base of the plant; the scape attains the height of more than four feet, and the large branching panicles of flowers are very striking. We are sorry that in our illustration we are not able to do it greater justice. The sepals are greenish yellow, barred with chestnut-brown, the petals yellow, faintly spotted with chestnut-brown at the base, and the lip yellow, spotted round the margin, with the side laciniæ wholly chestnut-brown. The bracts on the spike are dull green, barred with dull brown; these bracts give the plant a peculiarly decorative appearance, distinct from that of other Orchids. It blooms during May and June, and lasts some time in beauty.

This plant requires the same treatment as *C. cardiochilum*, figured on Plate 176, where we have given full particulars as to its cultivation.

Orchids at Manchester *(concluded)*.—Mr. J. Cypher, Cheltenham, exhibited *Dendrobium thyrsiflorum*, three feet across, with thirty spikes of its golden-coloured flowers; *D. suavissimum*, well bloomed; also *Lælia purpurata*, *Cattleya Mossiæ*, and *C. Mendelii*, very fine; *Odontoglossum citrosmum*, well flowered; and *Cattleya Skinneri*, with its lively distinct coloured blossoms. Mr. H. James, of Lower Norwood, exhibited some good specimens of *Oncidium Marshallianum* in fine colour, as well as of *Anguloa Clowesiana*, with its bright yellow flowers; also *Masdevallia Harryana*, with its rich crimson flowers; and *Odontoglossum vexillarium*, a mass of bloom. Messrs. Sander & Co., of St. Albans, sent a large miscellaneous collection of *Cattleya Mossiæ* and *C. Mendelii*, and among them some magnificent varieties; also of *Odontoglossum (Alexandræ) crispum*, with some fine spotted varieties, *Lælia purpurata*, and others. Messrs. Fisher, Son, & Sibray, of Sheffield, exhibited a notable collection of miscellaneous Orchids, including a most beautiful variety of *Phalænopsis amabilis*, with a fine drooping spike, three feet in length; three splendid plants of *Vanda tricolor*; a grand variety of *Oncidium Marshallianum*, with exceptionally bright yellow flowers; and the collection also included many *Cattleyas*, *Masdevallias*, and others. Mr. Thomas, of Chatsworth Gardens, exhibited a remarkably well-grown plant of *Odontoglossum vexillarium*, which was much admired.—B. S. W.

MASDEVALLIA CHIMÆRA

B.S. Williams Photo

MASDEVALLIA CHIMÆRA.

[Plate 203.]

Native of New Grenada.

Epiphytal. *Plant* tufted, producing from the crown numerous crowded leaves, the bases of which, and of the peduncles, are clothed with sheathing bracts. *Leaves* erect, six to nine inches long, broadly cuneate oblong acute, channelled, indistinctly nervose, the base tapering into a short petiole, which is closely invested by a truncate bract. *Scape* springing from amongst the leaves, somewhat decumbent, the upper part erect, slender, furnished with distinct sheathing boat-shaped oblong acute bracts, that next the ovary larger than the rest. *Flowers* solitary, widely expanded, the back and front nearly alike in colour, remarkable for their form; *sepals* three, divided nearly to the base, ovate, ciliated, fully an inch wide, the dorsal one an inch and a half long to the commencement of the tail, the lateral ones two inches long to the same point, beyond which the slender filiform tails, which are not ciliated, extend eight to twelve inches or more in length; the surface is scabrous or papillose, and more or less hairy, the colour a pale ochreous or tawny yellow, thickly mottled with rich dark chocolate-purple, the markings forming transverse lines of spots or bars, irregular in form and size, the tails wholly dark chocolate-purple; *petals* small, narrow cuneate-oblong, their apices four cleft; *lip* white, slipper-shaped, the sides toothed at the upper margin, one stout orange rib extending forwards from the base, and two smaller ones of the same colour produced on each side. *Column* green, reaching to the base of the lip, as long as the petals.

Masdevallia Chimæra, *Reichenbach fil.* in *Gardeners' Chronicle*, 1872, 463; *Id.*, *Xenia Orchidacea*, ii., 195, t. 185, and t. 186, fig. 1; *Moore*, *Florist and Pomologist*, 1873, 2 with fig.

The extraordinary group of *Masdevallias*, of which the subject of the annexed plate is a prominent example, ranks among the most curious and interesting species of a genus which has been getting numerous of late, but which, within a very few years, was only known to botanists by dried specimens, the plants being found to be so very difficult to import. Now that they have been brought to Europe in a living condition, it has been found that the species are remarkably numerous, and varied in character, and the plants have become more plentiful, having been more keenly sought after by our collectors, who have been well repaid for their researches. In their native habitats they must be very numerous, as, unfortunately, there have been many thousands lost on their way to Europe.

The difficulty of importation lies in their not having any fleshy bulbs to support them on their journey, so that they require much extra care; they should be

collected at the proper season, which is when they are dormant, and more than this, every attention should be bestowed upon them on their arrival. They should be placed at once in baskets, with some broken crocks, and a little sphagnum moss at their roots, and very little water should be applied; the moisture should not be allowed to touch the foliage until the plant shows signs of growth, and they must be kept in a light shady place. When they are getting established they will be better suspended near the roof.

Our drawing was taken from a well-bloomed specimen in the fine collection of W. Vanner, Esq., Camden Wood, Chislehurst, where Orchids are well cultivated.

Masdevallia Chimæra, is a dwarf evergreen species, with tufted stems and pretty green foliage, growing about eight inches high. The flowers proceed from scapes, which spring up along with the leaves, and are partly drooping; they are of quaint appearance, the flowers measuring about eighteen inches across from tip to tip; the colour is ochreous yellow, densely spotted and barred with blackish purple, the surface being hairy, while the tails are wholly blackish purple, and not hairy. It flowers at different times of the year, and continues for about a fortnight in blossom.

We find the plants of this group of *Masdevallias* to thrive best in baskets, or in a kind of boat-shaped arrangement made after the manner of a basket, with a semi-circular bottom and wooden ends, as their flower spikes often protrude between the wood-work; it is indeed natural to some of the species to bloom in this way, which also shows the flowers off to better advantage. The basket should not be large—just a little larger than the plant—and as a compost, rough fibrous peat on a little sphagnum moss seems to suit them, with sufficient drainage to admit of a good supply of water being given in their growing season. Even when at rest the material should be kept moist, as they have no thick fleshy pseudobulbs to support them, which makes them impatient of drought. They thrive best suspended from the roof, but shaded from the sun, as the leaves are apt to get scorched and turn yellow if exposed. The cool Odontoglossum house suits them, but we keep ours in the warmest part of it.

They are propagated by dividing the plant when in vigorous health. It is very necessary to keep these plants free from insects.

TRICHOCENTRUM ALBO-PURPUREUM.

TRICHOCENTRUM ALBOPURPUREUM.

[Plate 204.]

Native of North Brazil.

Epiphytal. *Pseudobulbs* minute ovoid tufted, monophyllous, producing flat creeping roots, which cling firmly to the surface of the block. *Leaves* sessile, lanceolate-oblong acute, four to six inches long, pale glossy green, fleshy, keeled beneath. *Peduncles* one-flowered, springing from the base of the diminutive pseudobulbs. *Flowers* showy, about two and a half inches across in each direction, the parts spreading; *sepals* cuneate-ligulate acute, over an inch long, the dorsal one slightly incurved, the lateral ones somewhat deflexed, bright cinnamon on the inner face, and tawny yellow on the outer; *petals* similar, but less narrowed towards the base; *lip* adnate to the base of the column, projected forwards, panduriform or subquadrate, bilobed at the apex, an inch and a half long, and rather less in breadth, the posterior half, which is narrowed at the base into a short dilated claw, bearing on each side a large blotch of rich magenta-purple, the broader anterior part white, with a flabellate arrangement of rosy purple veins, narrowed backwards in the centre, and becoming yellow where it joins the crest of four linear rosy purple keels. *Spur* stout, curved half as long as the ovary. *Column* white, short, with the wings produced above into a pair of curved conical horns.

Trichocentrum albopurpureum, *Linden and Reichenbach fil.*, in *Gardeners' Chronicle*, 1866, 219, with fig.; *Id.* 1868, 627; *Hooker fil.*, *Botanical Magazine*, t. 5688.

Trichocentrum is a small genus of very pretty Orchids, the species we here figure being one of the best of them. It is a very free-blooming plant, as may be seen from our illustration, the sketch for which was taken from a neatly grown plant in the well-known collection of Mr. J. E. Bonny, Downs Park Road, Hackney.

Trichocentrum albopurpureum is a dwarf evergreen plant, with foliage about six inches in length, of a light green colour; the flowers proceed from the base of the minute pseudobulbs on peduncles about two inches in length, and have a pretty drooping position; the sepals and petals are reddish brown inside, dull yellow outside, and the lip is white, having two large violet-purple patches, one on either side of the crest, and a few pale radiating veins of the same colour on its anterior part. It blooms during the summer months and lasts some time in beauty.

These plants are pretty dwarf-growing epiphytes, and should be in every collection, as they occupy so little room. They do well on blocks, or rafts, or in small baskets suspended from the roof, so that they receive all the light possible, but they must be shaded during the hot part of the day, since small plants like

these cannot bear too much sun. We find the warmest end of the Cattleya house to suit them, and they should have a little live sphagnum moss about their roots. They like to be kept moist at the roots during their period of growth, and even when at rest they must not be allowed to get dry, for these small almost bulbless subjects require to have constant support. They must be kept free from insects; the white scale will sometimes attack them, and these little plants cannot endure the onslaught of that pest.

Odontoglossum vexillarium album *(Finet)* and O. vexillarium Measuresianum *(Hort.)*.—We received during the spring of 1884 a white variety of *O. vexillarium* from M. Finet, of Argenteuil, France, under the name of *album*, which was quite distinct from anything we had previously seen; the lip was pure white, and the sepals and petals were also white, with the faintest roseate tinge towards the lower portions. Having our doubts as to its constancy, we awaited its flowering this season, when, we are pleased to say, it produced larger flowers of precisely the same colour as previously. The plant was exhibited on the 12th June, 1884, in Paris, and was awarded a First Prize as a New Plant. This is a lovely variety, and we congratulate M. Finet upon obtaining such a beautiful novelty. In July, of this year, R. H. Measures, Esq., Woodlands, Streatham, also forwarded us a nice spike of a white *Odontoglossum vexillarium*, which had been exhibited at the Royal Horticultural Show in July, and was deservedly awarded a First Class Certificate; this variety is exceedingly pretty, and differs from the variety above noted in its flowers being smaller and whiter, the backs of the sepals and petals are also white, and, indeed, this is the purest white form we have yet seen.—B. S. W.

Lissochilus Krebsii purpurata.—This new plant was in July last flowering at the Royal Botanic Gardens, Regents Park, and is a very fine thing. It is a pity that the Lissochiles are not more generally grown, as they are most beautiful and interesting objects, and belong to the terrestrial group of Orchids, which has comparatively few representatives. The scape in this variety is about three and a half feet high, and has produced as many as twenty flowers, a few of which only open at one time. The individual flowers are two inches across; the sepals dark green at the back, and deep maroon-purple in front; the petals ovate, bright yellow above, and paler cream, faintly veined with red beneath; and the lip dull orange-yellow, with the lateral lobes chocolate-purple, streaked with darker lines. The plant was introduced by Mr. E. A. Heath, from Southern Africa.—H. W.

J. Nugent Fitch del et lith.

SCHOMBURGKIA TIBICINIS

SCHOMBURGKIA TIBICINIS.

[Plate 205.]

Native of Honduras.

Epiphytal. *Pseudobulbs* clustered, terete, tapering upwards so as to become conical, annulate, furrowed, hollow and horn-like, one to two feet long. *Leaves* coriaceous, two or three from the apex of the bulbs, oblong, emarginate, spreading. *Scape* very long, sometimes as much as ten feet, terminal, becoming fully developed with the young stems as they complete their growth, and bearing its handsome brightly coloured flowers in a large pyramidal panicle. *Flowers* two and a-half inches across, the exterior of a pale mauve streaked with white on the lower side of the lip; *sepals* oblong obtuse, spreading, slightly undulated, of a purple-chocolate inside, paler and whitish towards the base, the lateral ones shorter; *petals* also oblong and spreading, equalling the dorsal sepal, somewhat more undulated, similar in colour; *lip* large and prominent, oblong, three-lobed, the large oblong lateral lobes incurved for nearly their whole length, the outer surface deep mauve-purple, the inner surface yellow with the sides veined with crimson, and having five elevated veins along the centre; the short front lobe rounded, sub-rhomboid, emarginate, whitish in the centre, and of a deep rose colour at the margin. *Column* about half as long as the lip, white stained with purple, deflexed.

Schomburgkia tibicinis, *Bateman*, in *Botanical Register*, 1844, miscell. no. 119; *Id.*, *Orchidaceæ of Mexico and Guatemala*, t. 30; *Flore des Serres*, t. 49 *(grandiflora)*; *Lindley*, *Botanical Register*, 1845, t. 30 *(grandiflora)*; *Hooker*, *Botanical Magazine*, t. 4476 *(grandiflora)*.

Epidendrum tibicinis, *Bateman*, in *Botanical Register*, 1838, miscell. no. 12.

Bletia tibicinis, *Reichenbach fil.*, in *Walpers' Annales Botanices Systematicæ*, vi., 429.

The genus we now introduce to our readers is one of small extent, but contains a few species that bear beautiful flowers. Their great faults are producing very long gaunt stems, and being shy blooming; but they are useful and accommodating, inasmuch as they help to produce an effective arrangement of colours, for the cultivator can place his plants in any position, so that the raceme of flowers may hang or come in wherever he wishes it, in order to produce the best appearance. We have seen these plants with splendid spikes of flowers shown many years ago at Chiswick, and also at the Royal Botanic Gardens, Regent's Park, by several growers, and they proved very useful in arranging a good and varied collection, for although the peduncle was long, the grand panicle of flowers could be brought to the front, the plant being set at the back of the collection, and the mass of handsome flowers brought forward to any required position. If the plant has several flowering

growths, it will make a grand display, the form and colour of the flowers being very distinct from those of other Orchids, which is a reason why it should be more generally cultivated.

Our drawing was taken from a finely managed specimen in the well-known collection of H. Grose Smith, Esq., The Priory, St. Helens, Ryde, Isle of Wight. This collection comprises many fine East Indian Orchids—a fact we are glad to note, as so few, comparatively, of our Orchid growers are now cultivating them, which is to be greatly regretted, as the species of *Saccolabium*, *Aërides*, *Vanda*, *Renanthera*, *&c.*, are among the finest of our Orchids.

Schomburgkia tibicinis is an evergreen species from Honduras. The stems or pseudobulbs are about a foot and a-half in height, and grow to a good size, the floral peduncles proceeding from the top of the completed growth, and reaching some six feet or more in length, the blossoms being produced at the extremity; each individual flower is about three inches across, with sepals and petals of a pale mauve-purple flushed with crimson, and the lip mauve on the exterior part, the interior yellow, striped with bright red, and margined with pale rosy purple. It blossoms in May and June, and continues in bloom for several weeks. The stems are hollow and very hard, and in their native country serve as horns for the children, and also as abodes for swarms of ants.

The *Schomburgkias* all require the same kind of treatment, and are best grown in baskets, on blocks of wood, or on rafts. If on the latter two, they require a more plentiful supply of water during the growing season, in order to encourage them to make strong growth, which is the only way in which to expect them to bloom. Mr. Grose Smith's gardener, Mr. Earl, must have carried out this plan in producing the specimen from which we have obtained our sketch. The whole of the species must be got into vigorous growth, in order to induce them to flower; they also require to be grown near the glass, suspended from the roof, where they can get a good deal of sun, excepting during the time when it is very potent, and then a little shade must be given. They must always be kept near the light, so that the stems may be well matured. After they have finished their growth, less moisture will be required, merely sufficient water being given to keep the bulbs plump, as they cannot endure to become dried or shrivelled. As soon as they begin to show their flowering peduncles, extra water may be given them at the roots, which will help forward the development of their flowers, since the long spikes require prompt and material support.

After the plants have finished flowering, they begin to grow. If placed in baskets, give them good drainage and lumps of charcoal in the compost, as their roots like to work about amongst these, and the small quantities of rough fibrous peat mixed with them, but always keep the roots from stagnant moisture. When the material begins to decay, take it carefully away without injuring the roots, for the plants do not like to be disturbed after they are once established. We give them the benefit of the warmest part of the Cattleya house.

J. Nugent Fitch. del et lith.

ONCIDIUM BRUNLEESIANUM.

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ONCIDIUM BRUNLEESIANUM.

[Plate 206.]

Native of La Plata.

Epiphytal. *Pseudobulbs* linear ligulate, narrowed upwards, four inches long, slightly furrowed, dark green. *Leaves* two or three from the apex of the pseudobulbs, oblong ligulate, acute, broadish, furrowed. *Peduncle* radical, slender, pale purplish, bearing a spreading ovate panicle of exceedingly pretty flowers, which are remarkable for their strongly contrasting colours, the rachis in the upper portion being zigzag. *Flowers* crowded, the parts rather convergent than spreading, remarkable for the large rolled-up lip, which thus appears to have an oblong outline as seen on the plant; *dorsal sepal* obovate-obtuse, convex, almost boat-shaped, half an inch long, dull yellow, the *lateral* ones combined into an oblong bidentate form, rather smaller than the dorsal one, but of the same dull yellow; *petals* spreading, narrow oblong, half an inch long, pale yellow, faintly cross-barred with very light reddish brown; *lip* half an inch long, bright yellow, three-lobed, the deep side lobes erect, blunt-angled, and infolded so as to nearly meet at the top, the dorsal sepal closing over the opening, the centre lobe three-fourths of an inch wide, obreniform, recurved, of an intensely rich deep maroon, the spot passing down so as to become obovate, the disk marked with transverse maroon-crimson lines, provided with two blunt keels, and having one or two warty elevations at the side, and in front two stout conical projections, the whole crest forming a boat-shaped body with two anterior horns. *Column* yellow, half the length of the lip, hooded at top, and continued into two broad rounded undulated wings below.

Oncidium Brunleesianum, *Reichenbach fil.*, "*Otia Bot., Hamb.*," p. 87; *Id.* in *Gardeners' Chronicle*, N.S., xix., 340.

This pretty new species of *Oncidium* is quite an acquisition among the small-flowering kinds, as will be seen by our illustration. It is, moreover, one that takes up but little space, and this is generally an object with Orchid growers, as there are many species which claim a place in our cultivated collections. The Oncids are most useful for their brilliant colours, and, in the generality of cases, they have a graceful and effective appearance when intermixed with other Orchids. For our figure of this novelty we are indebted to the kindness of R. B. Lemon, Esq., Moat Lodge, The Avenue, Beckenham, in whose collection it flowered during the present year.

Oncidium Brunleesianum is a native of La Plata, having been gathered with a batch of *Oncidium varicosum* on the Rio de la Plata. It is an evergreen species, with dark green pseudobulbs about four inches long, and having the same appearance as those of *O. pubes*. Like that plant, it produces branching panicles of gaily-coloured though small flowers, the sepals and petals being pale dull yellow faintly barred

with brown, and the lip rich orange-yellow, with a conspicuous blotch of deep sepia-brown on the anterior part. It blooms in March and April, and continues in flower for several weeks.

This *Oncidium* is best grown in a small basket or pan, with good drainage and rough fibrous peat, mixed with small lumps of charcoal, placed on live sphagnum moss, as these small-growing Oncids enjoy sending their roots among the moist material when it is kept well open so that the roots can freely get through it, and be well aërated. The water given must also be allowed to pass away without becoming stagnant, which would be injurious to the plants. Good sweet rough open material is most important in providing a compost for these and other plants that are found growing on trees in moist places in their native country, where their roots are at liberty.

All these small Oncids are best placed in the Cattleya house suspended near the light, as their small growths will then have a better chance of making stronger pseudobulbs, and this will induce them not only to send forth their flower spikes more freely, but to develop them more vigorously.

Saccolabium Blumei Russelianum.—There is now flowering in the collection of R. H. Measures, Esq., Woodlands, Streatham, a fine example of this most rare and beautiful Saccolabe. The plant has several strong growths, and is producing two spikes of flowers which are each two feet in length, the individual flowers being very large, and of good substance, and the markings very distinct and beautiful. This is, without exception, the finest variety of *S. Blumei* we have ever seen, and is even superior, as regards length of spike, to the variety flowered by the late J. Russel, Esq., of Falkirk, many years ago.—B. S. W.

LÆLIA MEASURESIANA.

LÆLIA MEASURESIANA.

[Plate 207.]

Native of Brazil.

Epiphytal. *Stems* clavate, compressed, closely furrowed, upwards of a foot in height, one or two-leaved. *Leaves* leathery in texture, oblong-obtuse, emarginate. *Peduncle* rising out of a short whitish brown acute spathe, and supporting about four flowers arranged in a corymbiform raceme. *Flowers* four to five inches across, appearing to be of moderate size in consequence of the parts being rather narrow; *sepals* lanceolate, somewhat wavy or twisted, white; *petals* also white, oblong-lanceolate, broader and more undulated than the sepals; *lip* two and a half inches long, the basal half or more somewhat closely convolute, yellowish white, the inside of the throat yellow; front lobe one and a quarter inch wide, roundish, the edge meeting over the mouth of the tubulose portion, and forming a distinct even border of delicate rosy pink, the anterior margin also frilled; the front lobes beyond the throat of a pleasing magenta-rose, flabellately veined in curving streaks, pale in the anterior part for about half the extent of the border, and in the paler part more or less streaked with deeper magenta-rose, the base on both sides being of a full magenta hue so as to cut off the throat in a nearly straight line. *Column* included.

Lælia Measuresiana, *Williams, Orchid-Grower's Manual*, 6 ed., *addenda*.

We are pleased to have the opportunity of figuring one of the most delicate and beautiful of the *Lælias*—a group which ranks among the finest of cultivated Orchids. Our present subject is a choice addition to the many other charming species of this favourite genus, whose showy and attractive flowers always prove acceptable to those who keep up a collection of these distinguished subjects. We are indebted for our sketch to the kind permission of R. H. Measures, Esq., Woodlands, Streatham, in whose honour the plant is named, and who is fortunate in blooming so many new and rare Orchids. This *Lælia* is very free in producing its elegantly-coloured and showy blossoms, which are of good size and substance, and grow in fine corymbiform heads.

Lælia Measuresiana is a compact-growing evergreen plant, with clavate stems fifteen inches high, and dark green bluntly-oblong leaves about six inches long and two inches broad. The racemes of flowers proceed from a sheath after the growth is completed. The sepals and petals are white, the lip of a bright rosy purple, beautifully frilled round the margin, the throat yellow with the upper portion bordered with pale rose. It blooms during the months of April and May, and lasts for three weeks in perfection.

This *Lælia* has been grown, by Mr. Measures, in a pot with fibrous peat and a good amount of drainage; it was kept moderately moist at the roots during its period of growth, and was placed at the warm part of the Cattleya house, on the side table, in the same kind of position in which we find all this class of *Lælias* to enjoy themselves, and in which they thrive. Under these conditions we find they make fine pseudobulbs and bloom freely.

One of the main points in their treatment is to afford them plenty of light, just shading the foliage from the burning sun with a very thin blind. This, we note that Mr. Measures uses as well as ourselves. We cannot find any better material, as it is durable. We have used it for many years for all our Orchids, and the results have been most satisfactory. This material has also been used by many other Orchid growers with success, as it allows a good amount of light to enter, and keeps off the burning rays of the sun, which is just the requirement of the thin-stemmed kinds of *Lælia*. They do not bear shrivelling without injury, and therefore the stems and foliage should always be kept plump.

Cattleya Gaskelliana.—We have received, through the kindness of R. H. Measures, Esq., Woodlands, Streatham, a very fine variety of this desirable autumn-flowering *Cattleya*, almost identical in size and colour with *C. labiata pallida*, figured at Plate 121 of our third volume. This is the finest and darkest variety we have seen, the varieties mostly running into lighter forms, and taking more after the pale varieties of *C. Mendelii*.—B. S. W.

Oncidium varicosum Rogersii.—There is now flowering in the Victoria and Paradise Nurseries, a fine example of this beautiful Orchid. The spike has nine branches, bearing seventy flowers, and is a very fine variety, identical with the form represented in *Warner's Select Orchidaceous Plants*, second series, Plate 31. This is, without doubt, the most showy *Oncidium* yet introduced; the lips measure two and a-half inches across.—B. S. W.

Hooker's Icon. Pl. et Ined.

B.S. Williams Publ.

TRICHOGLOTTIS FASCIATA.

TRICHOGLOTTIS FASCIATA.

[Plate 208.]

Native of Eastern Tropical Asia

Epiphytal. *Stem* erect, stout, leafy, scandent, throwing out coarse fleshy roots. *Leaves* about three inches long, and over an inch broad, oblong obtuse, apiculate, recurved at the apex, the under surface keeled, the base sheathing the stem, which is green. *Peduncles* lateral, springing from the sides of the stem opposite the leaves, and bearing a short raceme of about four largish showy flowers, attached by trigonous pedicels. *Flowers* spreading, two inches across; *sepals* (dorsal) cuneate oblong, apiculate, pale greenish yellow, closely cross-banded with pale chestnut-brown, the lateral ones of the same size, form, and colour, but falcately curved towards each other; *petals* similar; *lip* shorter than the sepals and petals, three-lobed, the two lateral lobes broad, erect, with acute front angles, the front lobe flat, oblong-ovoid, blunt, blush-white, with a few faint brown dots, a pair of acute falcate arms standing out right and left in front of the lateral lobes. *Column* short, yellow at the tip, stained with brown below.

Trichoglottis fasciata, *Reichenbach fil.*, in *Gardeners' Chronicle*, 1872, 699.

Trichoglottis is a small genus of Orchids, of which the only one that has come under our notice is the plant here figured. It is a very peculiar-growing plant, and is rare. It grows somewhat in the way of a *Renanthera*, throwing out its stout roots and racemose flower spikes much in the same way; but the plant is more free in producing its numerous and shorter spikes of very pretty flowers, as will be seen by our illustration, which was prepared from a drawing representing a vigorous plant in the collection of G. Heriot, Esq., Cholmeley Park, Highgate, who cultivates some good Orchids as well as other plants.

Trichoglottis fasciata is an evergreen species of scandent growth, and is furnished with blunt oblong light green leaves, the peduncles of flowers proceeding from opposite the leaves on each side of the stem. The sepals and petals are pale yellow barred with brown, and the lip is blush-white. This pretty species bloomed in April of the present year under the care of Mr. Aldous, who has grown the plant in the East India house.

We should advise the cultivator to grow it in a pot with live sphagnum moss and good drainage, giving it a liberal supply of water during its period of growth; and as it roots freely up the stem, producing thickish fleshy roots, we should recommend to give gentle syringings during the warm days of summer, which would be beneficial. In its native country, it is found on trees, where it gets a supply of the heavy rains in the growing season, and in the dry season it imbibes the heavy night dew, which is a great help to those Orchids that have no fleshy pseudobulbs upon which to draw for support.

These plants are propagated by taking off the top part with a portion of the roots, and potting it, leaving the bottom part with leaves and roots; this will in due course break and produce other young shoots, which must be taken off when well rooted, and potted as independent plants.

Cattleya Hardyana.—This gorgeous Cattleya was exhibited by G. Hardy, Esq., Pickering Lodge, Timperley, at a recent meeting of the Royal Horticultural Society, and it was deservedly awarded a First Class Certificate, the plant being pronounced by all Orchid cultivators who were present, to be the finest *Cattleya* they had ever seen. It is supposed to be a natural hybrid between *C. gigas (imperialis)*, and *C. Dowiana aurea*, which two species grow together in Colombia. They resemble one another so much in growth, that we have on several occasions purchased *C. gigas*, and have had some plants of *C. Dowiana aurea* flower out of the lot, and have imported for *C. Dowiana aurea* what has turned out to be *C. gigas*. The flowers are about eight inches across, the sepals and petals of a rich rosy purple, the lip large, as in *C. gigas*, brilliant magenta-crimson on the anterior part, the central portion being beautifully veined and suffused with golden yellow. It has also the two yellow eye-like blotches so peculiar in *C. gigas*. The effect of this blending of colour against the rich sepals and petals produces a most telling effect; and flowering as it does in August, it will prove most useful, as at that time Orchid flowers are generally scarce. We must congratulate Mr. Hardy upon obtaining such a gem.—B. S. W.

J.Nugent Fitch del.et lith

B.S.W. Imp.

PHALÆNOPSIS SANDERIANA.

PHALÆNOPSIS SANDERIANA.

[Plate 209.]

Native of the Eastern Archipelago.

Epiphytal. *Stems* very short, producing above a tuft of bold two-ranked leaves, and below a few stout fleshy roots. *Leaves* few, oblong-ligulate narrowed towards the overlapping base, apiculate, of thick fleshy texture, dark green, marked on the upper surface with silvery gray. *Scape* issuing from the stem below or between the leaves, stoutish, of a purplish brown, bearing a drooping raceme. *Flowers* about three inches in breadth, the parts spreading, the tint of colour very charming; *sepals* (dorsal) oblong-obtuse, narrowed at the base, about one and a-half inch long, and three-fourths of an inch broad, of a very delicate mauve or peach colour, the lateral ones obliquely ovate-oblong, shortly acute, the basal margin on the lower (broader) side undulato-recurved, and of a paler hue, almost white; *petals* subrotund obtuse, the base cuneate, one-and-a-half inch long, and about an inch and five-eighths broad, of the same delicate tint as the sepals; *lip* scoop-shaped distinctly clawed, three-lobed, the two broad rounded or semi-ovate blunt entire lateral lobes concave and curved upwards so as to meet over the column, marked outside with two short purple blotches, and having the lower edge narrowly bordered with yellow, the front lobe three-fourths of an inch long, hastate, curved upwards at the point, the basal angles one-fourth of an inch long, and the apex parted into two divergent curved filiform processes an inch long, while from the disk opposite the side lobes rises a two-parted oblong crest, rounded or bluntly toothed at one end—horse-shoe shaped according to Reichenbach—white below, yellowish at the apex, spotted with rich brown; the side lobes are creamy white, their discal portion spotted with mauve-purple, and their lower border yellow, the front lobe white, streaked with purple along the centre. *Column* short, terete, white, with a short mauve-tinted beak, the operculum with a cordate appendage over the stigmatic hollow.

Phalænopsis Sanderiana, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xix., 656; *Williams, Orchid-Grower's Manual*, 6 ed., 535; *L'Orchidophile*, 1883, 661.

Of late years the Phalænopsids have come very much into favour amongst Orchid cultivators, and deservedly so, as they hold a prominent place among the most charming of the Eastern species of this aristocratic race. Their large graceful branching racemes of flowers are strikingly beautiful, especially when mingled with foliage plants and ferns. They are sometimes called Moth Orchids, owing to the resemblance presented by their flowers to moths on the wing.

The drawing from which the annexed plate was prepared was taken from a plant in the well-known collection of G. W. Law-Schofield, Esq., New-Hall-Hey, Rawtenstall, near Manchester. We have also received flowers of a darker variety from Mr. Hill, gardener to Lord Rothschild, Tring Park, Tring.

Phalænopsis Sanderiana, which is of recent introduction, and was discovered by one of Messrs. Sander and Co.'s collectors on one of the islands of the Eastern Archipelago, has been named by Professor Reichenbach after the head of that firm, Mr. F. Sander. It is generally considered to be a natural cross between *P. amabilis* and *P. Schilleriana*. In its manner of growth and general habit it takes very much after *P. amabilis*, as a glance at the accompanying plate will show. The general outline of the flower also is that of *P. amabilis*, but the sepals and petals, instead of being white as in that species, are flushed with a pleasing rose colour, which in the best varieties becomes a deep rosy purple; the lip is white, marked with purple stripes, the side lobes being bordered with yellow, and the crest spotted with cinnamon-brown. It flowers during the summer and autumn months, and is worthy of a place in every collection.

It requires the same treatment as that recommended for *P. amabilis*, under Plate 11 of our first volume.

Odontoglossum Uro-Skinneri.—Edward Salt, Esq., Ferniehurst, Shipley, has forwarded us a spike of a grand variety of this old Orchid, in which the sepals and petals are heavily marked with brown, and the lip is unusually high-coloured, being of a bright rose-purple, with scarcely any white markings. The effect of this bright colour in combination with the dark-coloured sepals and petals is very fine. We must congratulate Mr. Salt upon obtaining such a beautiful variety.—H. W.

GOVENIA DELICIOSA

GOVENIA DELICIOSA.

[Plate 210.]

Native of Mexico.

Terrestrial. *Rootstock* tuberous, subterraneous. *Stem* erect, two-leaved, invested at the base by purplish brown bluntly-acute oblong sheathing nervose bracts. *Leaves* broadly lanceolate-oblong acuminate, about nine inches long and two inches broad, closely nervoso-striate, their bases enclosed with the stem by a pair of unequal sheathing bracts. *Flower stem* about one and a-half foot high, brownish green, furnished with a few close-set oblong-acute brown bracts, which are shorter than the ovaries, and terminating in a raceme of six to eight flowers, the pedicels pale reddish purple, each subtended by an oblong purplish brown bract half an inch long. *Flowers* white, the front of the lip spotted with dark purple; *sepals* oblong-lanceolate, the dorsal one arched over the column, an inch long, the two lateral ones shorter, deflexed, and laterally curved; *petals* smaller, with pale red transverse bars inside; *lip* nearly elliptic-apiculate, reflexed at the base and then curving forward about the middle, so that the front part is pressed against the hinder part, which is yellow and cross-barred with pale red, the front half being white covered with distinct round purple dots. *Column* white, with brown spots in front.

Govenia deliciosa, *Reichenbach fil. in Botanische Zeitung*, 1852, 836; *Id. Gardeners' Chronicle*, n.s., xxii., 230; *Williams, Orchid-Grower's Manual*, 6 ed., 337.

This genus belongs to the terrestrial section of Orchids—a group which is too generally neglected by cultivators. We feel certain that were their beauties better known, they would be much more frequently sought after, and we should see fine collections of them brought together. They are mostly thought to be difficult to cultivate, but we fear a great deal of this difficulty is caused through neglect of the plants while they are in a dormant condition. It is at this time that they require attention, as if they are over-watered when at rest bad results will certainly follow, and the tubers or underground roots will almost certainly decay. What can be more beautiful than some of the species of *Disa*, *Cypripedium*, *Lissochilus*, *Bletia*, *Orchis*, *Satyrium*, &c., many of which are quite hardy, and may be grown well in a cold frame? To be successful with these plants, therefore, it is not necessary to have even a greenhouse. Most of the plants belonging to this section of Orchids are found in North and South America, in South Africa, in Europe, and in some parts of Asia, but the majority are from the Eastern Hemisphere.

Govenia deliciosa is a very pretty and distinct Orchid, with the habit of a *Bletia*. It has an underground tuberous rootstock, from which proceeds an erect stem about a foot or eighteen inches in height, furnished with a pair of bold plicate

leaves. The flower-spike is borne at the top of the stem, and consists of from six to eight flowers, of which the sepals and petals are white and the lip yellow at the base, the front half being white covered with purple spots. It is of Mexican origin.

This species should be grown in a cool house or frame, and should be potted in a compost of loam, leaf-mould, and sand, with good drainage. When the growth is completed, the plant should be allowed to have a good season of rest, water being withheld until the tuber again shows signs of starting into growth.

Our drawing was taken from a plant which flowered in the Victoria and Paradise Nurseries during the past summer, and proved to be both pleasing and novel in its character.

The late Herr Roezl.—We have learned with deep regret that Herr Benedict Roezl, who had been ailing for some little time past, died at his residence in Prague, on October 14th, in his sixty-first year. The name of Herr Roezl will be well known by our readers as the introducer, either directly or indirectly, of some of our most rare and beautiful South American Orchids, and we are sure they will join with us in the expression of deep sympathy with his bereaved family. As evidence that his active and intelligent labours, as a collector, in the introduction of new and scarce Orchidaceous plants, have been appreciated by those best able to judge of their value, we may refer to the charming species which have been dedicated to him, and which will now become his living memorials. Amongst these we may especially name *Cypripedium (Selenipedium) Roezlii*, *Masdevallia Roezlii*, *Odontoglossum Roezlii*, and *Pescatorea Roezlii*, all plants occupying a front rank in their respective groups, besides many other valuable Stove, Greenhouse, and Hardy Plants.—M.

CALANTHE VESTITA OCULATA-ORIANTHA .

CALANTHE VESTITA OCULATA GIGANTEA.

[Plate 211.]

Native of Borneo.

Terrestrial. *Pseudobulbs* large, bluntly angular, covered when mature, with a silvery gray skin and terminating in the remains of the leaves of the previous season's growth. *Leaves* broadly lanceolate, herbaceous in texture, strongly nervose, retained on the plant during the flowering period. *Scape* radical, three to four feet long, more vigorous than in the usual forms, terminating in a well furnished arching raceme, shaggy with long thin hairs. *Flowers* large and very attractive, about three-and-a-half inches in depth, three inches across the spreading petals, and one-and-a-half inch across the lip, all creamy white except the eye-like spot on the disk, the pedicels green issuing from the axils of the boat-shaped acuminate pale green bracts; *sepals* lanceolate-acuminate, the dorsal one erect, the lateral ones spreading horizontally from the base of the lip; *petals* similar, but slightly broader acute, spread out between the dorsal and lateral sepals; *lip* projected beyond the rest of the flower, two inches long and one-and-a-half inch broad, flat, three-lobed, the lateral lobes obliquely oblong-obtuse, the front lobe broader, cuneate, and deeply parted into two oblong-obtuse segments, creamy white, with an eye-like spot of a dazzling flame colour or fiery red, which is extending forwards on to the disk or base of the lip, and is continued backwards to the end of the slender decurved tapering *spur*, forming a most attractive feature in the flower. *Column* projected forwards, half an inch long, broadly adnate with the base of the lip.

Calanthe vestita oculata gigantea, *Reichenbach fil.*, M.S.; *Williams, Orchid-Grower's Manual*, 6 ed., 166.

Until within the last few years the deciduous group of *Calanthe* has been limited to a very few kinds, but now the species and varieties are becoming more numerous—a fact which we are delighted to note, seeing that many of the latest introductions are great improvements on the older types. These novelties we owe to the perseverance of our botanical explorers, who are constantly finding and sending to Europe these and other useful plants, as the fruits of their explorations. These Orchids with their graceful spikes of charming flowers, are invaluable for the decoration of our houses in the long dull months of winter. *C. Veitchii*, together with *C. vestita* and its varieties, which were the only kinds formerly known, are well-known to be of easy cultivation; and the newly-introduced species and varieties resemble them in their requirements, so that anyone having a warm house can grow them without difficulty. They are very accommodating in their habits, as they will thrive either when suspended from the roof, or when grown on the tables of a warm stove-house. When in bloom they have a most elegant appearance, which is brought

out most fully when their drooping spikes are so arranged as to overhang or mingle with the foliage of ferns or other ornamental plants.

The variety we now bring under the notice of our readers is a thoroughly useful plant, and a valuable acquisition to the *C. vestita* section, being a gigantic and highly-coloured form. Our drawing was taken from a well-grown plant in the select collection of Dr. Duke, of Lewisham, who is a great lover of Orchids.

Calanthe vestita oculata gigantea will be seen to possess a remarkably showy character, and like *C. Sanderiana*, *C. Williamsii*, and *C. Turneri*, produces its blossoms after *C. vestita* and *C. Veitchii* are over, thus having a special value as affording a succession of bloom. The foliage of *C. vestita oculata gigantea*, moreover, remains green during the time of its flowering. It has long arching spikes, three to four feet in length, producing numerous flowers, which are large and of a soft creamy white colour with a white lip, the base of the lip and underside being of a dazzling fiery red, which feature is the most striking characteristic of the variety. It blooms in March and April, and continues flowering for two months or more.

Sir Trevor Lawrence, Bart., M.P., exhibited at one of the exhibitions of the Royal Horticultural Society, some few years ago, an example of this beautiful variety, with a long spike bearing as many as thirty expanded flowers, and there were then more to open; this specimen received a First Class Certificate and was much admired.

As regards its cultivation, Mr. Noakes, Dr. Duke's Gardener, cultivates this plant in the same way and gives the same treatment as that we have recommended for *C. Veitchii* at Plate 31 of our first volume.

CATTLEYA GUTTATA WILLIAMSIANA

CATTLEYA GUTTATA WILLIAMSIANA.

[Plate 212.]

Native of Brazil.

Epiphytal. *Stems* (pseudobulbs) erect, club-shaped, furrowed, diphyllous. *Leaves* lanceolate-oblong acute, five to six inches long. *Peduncles* about five-flowered, issuing from a bluntish spathe which is green, tinged with brown, the rachis green, and the pedicels stout, two inches long, dull pale brownish purple. *Flowers* in erect corymbiform racemes, large and handsomely coloured; *sepals* linear-oblong obtuse or acute, pale purplish, with a flush of olive-green, variously striate or spotted, especially near the edge with deep magenta-purple; *petals* rather smaller and more obtuse, sometimes emarginate, of a deeper tint of olivaceous pale purple, and more distinctly and evenly marked with dark purple streaks and blotches at the undulated margins, especially towards the tip; *lip* three-lobed, with the oblong obliquely acute lateral lobes closed over the column, convex, of a pretty palish mauve or lilac-rose, the front lobe beyond the contracted isthmus, which is deep purple, transversely reniform, an inch and a-half across, of a rich and very deep rosy purple, somewhat paler at the edge, which is distinctly undulated, *Column* included.

Cattleya guttata Williamsiana, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xxii., 70; *Williams, Orchid-Grower's Manual*, 6 ed., 185.

We have now to record a new *Cattleya* belonging to a section of which there are not many good varieties so thoroughly distinct from the species as the one we have here represented, one which is conspicuous not only for the beauty of its inflorescence, and the free manner of its growth, but also for its free-blooming qualities, as will be seen by a reference to our figure. The specimen from which the figure was prepared was a fine one, with several spikes bearing on each many flowers, and had bloomed equally well for two years in succession. It was named by Professor Reichenbach. Our drawing was taken from the above-named example, which is now growing in the rich and well-known collection of W. Lee, Esq., Leatherhead, to whom we sold the plant two years ago, and which represents the whole of the stock, with the exception of two smaller plants which we have in our possession. The three plants were purchased by us from Messrs. W. Thomson & Sons, of Clovenfords, in whose establishment Orchids are well cultivated and specially cared for.

Cattleya guttata Williamsiana is an evergreen plant, like the typical form in its manner of growth, but more compact; it has stems a foot and a-half high, with two leaves of a dark green colour, one on each side. The flower spikes proceed from the top after the growth is completed. The sepals and petals are of a dull purple colour, faintly striped towards the margin, or in some cases spotted

with deep purple; the lip is pale rosy lilac, with a very dark rosy purple front lobe. It blooms in June and July, and lasts for some time in beauty.

This plant requires the same treatment as the species itself, that is, it should be kept in the Cattleya house, under pot culture, with good drainage, in a compost of peat and sphagnum moss. This class of Cattleyas requires to be well grown, and never allowed to shrivel, either in the stems or foliage, for if either of these parts should fall a victim to neglect in this respect, the possibility is that they will fail to get over it. They must never be disturbed, excepting when they require fresh potting, or need fresh material about the roots, for they cannot endure to have bad sour material about them; it must always be sweet and fresh. The plants should never be cut unless they are in vigorous health. If it is required to increase them, care should be taken in performing this operation, to leave two or three old bulbs as well as the new growth. We find it better to cut them partly through, and when they begin to make growth the rhizomes may be cut asunder, but even then it will be better to leave the plant intact until the next season, and then to separate the parts just as they are beginning to make their growth, but with much caution, so that the roots may not be injured. After this pot them, but do not put them into large pots as they do not need it. Overpotting is dangerous in the case of these plants, for they do not require more material about them than just enough to keep them firm in the pot. Some lumps of charcoal intermixed with the peat will be beneficial to them, as it serves to keep the material open, and, moreover, the roots will be benefited by it.

THE ORCHID-GROWER'S MANUAL.—A new edition—the sixth—of this old and popular work, which has been entirely re-modelled, will be published during the present month. The following are some of the improvements introduced in the present issue:—The authorities for the names have been added, and the family groups to which the various genera belong indicated; the flowering period, mode of culture, and the native country are given, and a series of references to figures and synonymous names have been included. This more ample information, together with the increased number of plants described, has, naturally, much extended the size of the work, which now runs to 659 pages, containing descriptive particulars of upwards of 1470 species and varieties, together with 478 synonyms. A large number of engravings have been interspersed throughout the work, some forming single and some double page plates, and there are also a considerable number of blocks illustrative of types of the various genera. This work now made complete up to the present time, will be found invaluable to Orchid Growers.—B. S. W.

AËRANTHUS LEONIS.

[Plate 213.]

Native of the Comoro Islands, alt. 5,000 ft.

Epiphytal. *Stems* short, erect, with the foliage arranged in a fan-like manner, so as to form a close dense distichous tuft. *Leaves* thick in texture, set vertically on the stem, ensiform or broadish ligulate-lanceolate acuminate, falcately curved, of a deep green colour. *Peduncles* springing from the leaf axils, numerous, erect, short, green, with rather large amplexicaul ovate cucullate brown bracts, and bearing a raceme of five to seven flowers clustered rather closely amongst the foliage; *pedicels* green, curved at the tip. *Flowers* very freely produced, two and a half inches in diameter, pure white, fragrant; *sepals* lanceolate the dorsal one erect, the two lateral ones narrower and directed downwards; *petals* of nearly the same form, broader at the base, spreading; *lip* roundish ovate cuspidate, a little concave at the base, about an inch and a quarter long, and three-fourths of an inch broad, pure white like the sepals and petals; *spur* curved, from five to seven inches long, the basal part obliquely funnel-shaped, the upper two-thirds narrower and filiform, white tinged with green.

Aëranthus Leonis, *Reichenbach fil.*, in *Gardeners' Chronicle*, xxiii. 726; *Id.* xxiv. 80, figs. 17,18; *Williams, Orchid-Grower's Manual*, 6 ed. 631.

Angræcum Leonis, of *gardens.*

The species of *Aëranthus* form a small genus of Orchids allied to *Angræcum*. That which is here figured was discovered by Mons. Léon Humblot, and by him introduced to this country. It is a beautiful plant, and as it is a decided novelty in our collections, it will probably be much sought after by those who are fond of the smaller-growing epiphytal species of this aristocratic race. Our drawing was prepared from a specimen which flowered during the present year in the well-known collection of R. H. Measures, Esq., at Woodlands, Streatham.

Aëranthus Leonis is an evergreen species of dwarf habit, having peculiar sword-like falcate leaves, stout in texture, about a span long, and closely set on the stem. The flowers are white, the lip being broadly ovate and concave, and they are borne in racemes which sometimes consist of as many as seven flowers. These charming blossom last several weeks in perfection.

This plant requires the same treatment as other small-growing *Angræcums*, that is, to be cultivated in small baskets or pans with sphagnum moss and lumps of charcoal or broken potsherds intermixed with the moss; they do not require much material about them, the plants being found growing on trees, where the rains that fall during the growing season have free access to the roots. These rains serve to

nourish them while making their growth and developing their flowers, and the heavy dews that fall during their season of repose help to support them throughout that period. They have no thick fleshy pseudobulbs to nourish them, but they bear stout leaves which are sustained by the moisture; and as the foliage of the trees partly shades them from the burning sun, we must endeavour to imitate Nature in this respect as closely as possible, by shading the glass roofs of our houses during intense sunshine. They must be kept moist at the roots during the summer months, but less water will do during the winter, though even then the moss should be kept rather moist especially as the plants require so little rest.

We find these plants thrive best suspended from the roof of the orchid house, where they get light to induce their growth to become strong, which is one of the chief points to aim at in Orchid culture. The East India house suits them well. They must be kept free from insects, such as scale and thrips, which will sometimes attack their foliage—attacks which are very detrimental to the plants, and which cause many failures with small-growing species. Cockroaches should be kept from their roots or they will soon devour them, and thus stay their growth, healthy growing roots being necessary to the satisfactory development of all these plants.

Lælia elegans, varieties of.—H. J. Adams, Esq., Roseneath, London Road, Enfield, has been kind enough to send us a very fine flower of a new *Lælia elegans* in the way of *L. Turneri*, but distinct in the form of the lip, as well as in the colouring which is not so dark as in *L. Turneri*, though it is a most beautiful addition to the several fine forms of this species. The sepals and petals are of a light purple-rose colour and veined with a darker rose; the lip is magenta with a rose-coloured margin round the posterior part. We have latterly received many varieties of *Lælia elegans*, some with white sepals and petals and a dark magenta lip; some with rose-coloured sepals and petals and a dark lip, also many other variations of form and colour. They are most useful during the early winter season. This class of Orchids, indeed, appears to flower at all seasons, as we are seldom without some or other of them in bloom. They produce their flowers according as their growth is completed and matured, and this would seem to take place at various times of the year. Mr. May, who is Mr. Adams' gardener, informs us that the novelty above referred to was imported last year, as a very distinct form, which it has undoubtedly proved to be.—B. S. W.

DENDROBIUM NOBILE NOBILIUS.

B.S.Williams Publ.r

DENDROBIUM NOBILE NOBILIUS.

[Plate 214.]

Native of India.

Epiphytal. *Stems* terete, tapered below, leafy throughout, jointed, the internodes covered by a pallid longitudinally-veined membrane, representing the sheathing bases of the fallen leaves. *Leaves* fleshy, oblongobtuse, obliquely emarginate. *Peduncles* lateral, about two-flowered. *Flowers* three to four inches across, and much deeper and more richly coloured than in the type form, but as in that, of fleshy texture, with the parts spreading; *sepals* oblong acute, of a rich purple-amaranth, rather paler towards the base; *petals* broader, oblong-ovate, shortly cuspidate, of the same rich colour as the sepals; *lip* large, more than an inch broad, roundish-cordate, cucullate, pure white at the base, the apical portion recurved, deep amaranth purple, of a darker and richer hue than in any other known variety, the large hollow downy space towards the base being of the most intense blackish purple, which presents a very strong contrast with the surrounding white surface.

Dendrobium nobile nobilius, *Reichenbach fil.*, in *Gardeners' Chronicle*, xvii. 366; *Williams, Orchid-Grower's Manual*, 6 ed., 295.

There is no doubt that *Dendrobium nobile* is one of the most useful and beautiful, as well as one of the oldest of our cultivated Orchids. It is known to nearly all growers of stove plants, as it is frequently included in collections where no other Orchids are cultivated, on account of the profusion of blossoms it brings forth when judiciously managed—a fact which is abundantly sufficient to account for its popularity. We have often seen individual plants producing hundreds of lovely blossoms during the winter and spring months.

The form we now bring under the notice of our readers, is, as will be seen from the accompanying figure of it, a great improvement on all other forms in the *nobile* section. The colour is most brilliant, and the size of the flowers most ample. The drawing from which our plate was prepared was taken from a plant in the grand collection of Sir Trevor Lawrence, Bart., of Burford Lodge, Dorking. Henceforward every cultivator will be longing to possess this charming variety, which has only become known within the past few years, and is still very rare.

Dendrobium nobile nobilius is like the typical form, an evergreen epiphyte, with erect furrowed stems, clothed with small oblong leaves, dark green on both sides, and producing on either side of its ripened stems clusters of flowers, two or three together. The blossoms are about four inches in diameter, and have broad sepals and petals, white, richly suffused with rosy purple, which is deepened towards the tips; the lip is white on the basal half, and of a dark rosy purple on the anterior

half, having an intense purple-crimson blotch in the centre. It blooms during the winter and spring months, and continues in beauty about three weeks.

Our present subject requires the same management as the other forms of this species, which are all of easy culture if the proper treatment is given, and they obtain help when they require it. The essential points are—a good season of growth, and a distinct season of rest after the growth is completed. This may be known by the top leaf becoming matured, and the stems being swelled out to a good size, and well ripened. This ripening is essential in order that the plants may push forth their flowers at the proper season, the latter depending on their strength and the forwardness of their growth. When ripened early in autumn they put forth their blossoms earlier, by being kept in a dormant state in a cooler house after the growth is completed, water being withheld from their roots until they begin to show their flower buds; then a little moisture may be given as an inducement to the flowers to attain a higher degree of perfection.

These plants will well repay all the care that is bestowed upon them. They will grow vigorously in rough fibrous peat and sphagnum moss with good drainage, and will thrive either in pots or baskets in any warm house during their growing season. After they have finished their flowering they should be started into growth by giving more water and heat, which the *nobile* section delight in. The plants require much light in order to ripen their bulbs early. They usually flower from the second year's growth, but if their stems are well matured they sometimes bloom during the first year, though such cases are exceptional.

The Spread of Orchid Culture.—When many years ago we wrote the series of papers entitled *Orchids for the Million* in the *Gardeners' Chronicle*, we predicted that these charming and beautiful plants would some day be grown by the million, and be purchased at a small cost. It is between thirty and forty years since we wrote those words, and we have lived to see both these predictions fulfilled. We owe the great increase in the importation of Orchids both to this and other countries, to the unceasing energy of those who go out as plant collectors at the risk of their lives. In addition to all this, great strides have been made in the propagation of Orchids. Some of the genera produce many young plants on their stems and pseudobulbs, and these increase very quickly; such are the species of *Calanthe*, *Dendrobium*, *Epidendrum*, *Thunia*, *Pleione*, and many others. This all tends to encourage and to bring forward new growers, who are led on by the influence brought to bear upon them by the splendid flowers, which are to them a delight, and well repay all the trouble they may take with them. Those who have any taste for Nature's productions cannot but admire Orchids, for their blossoms are most wonderful and fascinating, so that the more one sees of them the more one must admire the varied forms and colours that blend so harmoniously, and which can be so managed as to enable us to have these gorgeous floral productions in full beauty at all times of the year.—B. S. W.

J. Nugent, Hort. del. et lith.

ODONTOGLOSSUM INSLEAYI SPLENDENS.

ODONTOGLOSSUM INSLEAYI SPLENDENS.

[Plate 215.]

Native of Mexico.

Epiphytal. *Pseudobulbs* ovate, compressed, striate, three inches high and two inches broad, diphyllous, *Leaves* ligulate-lanceolate acute, about two inches wide, of a leathery texture. *Scape* erect, from the base of the pseudobulbs, bearing from four to six blossoms. *Flowers* large and stout, four and a half inches across, spreading; *sepals (dorsal)* ovate, narrowed to the base, acuminate, almost wholly of a light chestnut-brown colour margined with a row of spots of a deeper brown, the tip and extreme edge yellow, which colour occasionally breaks through the brown spotting in transverse lines; *lateral sepals* and *petals* more oblong in form, but similarly coloured; *lip* very bright yellow, obreniform, clawed, the claw purplish red banded with yellow, the limb wholly yellow in the central part with a compound row of purple-red spots, which become larger and more elongated towards the base, where they are more or less curved or kidney-shaped; the callosities of the lip, of which a small one occupies both sides of the hinder lobe, and an interposed forcipate one runs out into a pair of horns, are of a deep orange-yellow with purplish spots.

Odontoglossum Insleayi splendens, *Reichenbach fil*, in *Gardeners' Chronicle*, 1868, 1038; *Williams, Orchid-Grower's Manual*, 6 ed., 445.

The accompanying plate represents a very fine Odontoglot of the *O. grande* section—a group, the members of which are for the most part of a showy character, and are quite distinct from those of the *O. crispum* or *Alexandræ* type, of which latter, we have so many different forms from time to time brought under our notice. We are, however, glad to be able to show to our readers that superior varieties are being met with in the *O. Insleayi* section, since these furnish colours that are wanted among the cool Orchids. There have been large importations of the species now under notice, and we hope that still further varieties may be found amongst them; and also that other useful species may reward the researches of our energetic collectors, who, moreover, we may expect and hope, will find many more ornamental species in their exploration of the vast extent of country through which they have to travel in searching the native habitats of these plants.

Our drawing was taken from an imported plant which we received from Mexico some few years ago, along with others representimg the typical form of the species. It bloomed three years ago and delighted us with its distinct and showy blossoms. We have no doubt that other Orchid growers have bloomed the same form, but if so it has not come under our notice.

Odontoglossum Insleayi splendens is an evergreen plant of epiphytal growth, like *O. grande*, and it blooms in the same way. The flowers measure four and a half

inches across, and are of good substance, as many as six blooms being sometimes produced on one spike. The sepals and petals are of a rich shining brown tipped and edged with yellow, while the large expanded lip is yellow spotted with bright carmine, and having deep orange-yellow crests. It flowers in October and November when Orchids are in request, for it is then they make the dull months gay with floral charms, and these flowers last three or four weeks in beauty.

We find this plant does well at the warmest end of the Odontoglossum house, and it thrives well in fibrous peat, with good drainage, a moderate supply of water being given at the roots during the growing season. When the growths are completed less water will serve, just enough being given to keep the pseudobulbs in a plump state. It is a free-flowering plant, and is also free in producing its handsome spikes of flowers. These plants must be kept near the glass so as to receive all the light possible; but they should have a thin shading during periods of hot sunshine as they are not able to endure the sun's piercing rays during the hottest part of the summer, the foliage being susceptible of injury from scorching.

The same treatment applies to *O. Insleayi*, that is given to other Odontoglots.

Orchid Culture; Taking Counsel.—It is a mistaken notion to think that because one can grow a few Orchids well, one knows all about them, and does not require to be further enlightened on the subject. We generally find those to fail who think so. And why? Because their opinion of themselves is so good that they never ask the advice of others. There can be no disgrace in acquiring knowledge, especially on the part of those who are not sufficiently instructed; and when fresh knowledge is attained, if judgment, perseverance and observation are employed in the application of it success will surely follow. No one can be perfect in all the branches of plant culture. A great deal depends on the situation in which the houses are placed; also on the locality. In taking advice be careful to weigh it well in your own mind before acting upon it. We have seen many failures result from taking advice which was not sound, especially in the case of beginners, and our recommendation, therefore, is not to hasten to adopt any new method of treating these valuable plants, without first consulting some good practical and experienced cultivator. There is a great difference in individuals. Some gentlemen get new ideas from newspapers or from books, and tell their gardeners, who have to obey orders, to follow them; and if the treatment proves a failure the gardener gets the blame, while if it is successful the employer takes the credit. The better plan is for the employer to consult with his gardener on what he has heard or read, and thus by bringing each other's experience to bear on the subject a satisfactory conclusion may be hoped for. This is the way our employer used to treat us:—We discussed fully the object we had in view. If we saw a plant cultivated better by one grower than another we were always glad to be able to talk the subject over, and find out the circumstances that led to the successful result, and after holding this consultation upon the subject, we generally succeeded.—B. S. W.

MILTONIA WARSCEWICZII

MILTONIA WARSCEWICZII.

[Plate 216.]

Native of Peru and New Grenada.

Epiphytal. *Pseudobulbs* narrow oblong, compressed, three to five inches long, and about one inch broad, monophyllous. *Leaves* oblong acute, five to six inches long, of a bright pale green. *Scape* springing from the axil of an accessory leaf, wiry, bearing a large stalked nodding panicle or raceme of numerous rather closely-set flowers, which have each an ovate concave bract sheathing the base of its pedicel, the scape itself, as well as the pedicels, being thickly blotched with purple, so as to become dark coloured. *Flowers* of singular form and colour, but remarkably effective; *sepals* and *petals* cuneate ligulate obtuse, incurved, half an inch long, revolute at the edge which is also strongly undulated, dark brownish purple, both sepals and petals white, or the sepals sometimes greenish at the extreme tip; *lip* sessile, orbicular-oblong or subflabellate, deeply bilobed with an apiculus in the sinus, the surface velvety, mostly occupied by a roundish brown-purple blotch, the centre of which has a transversely oblong portion glossy, the surface being otherwise opaque; the sides have a narrow and the front part a broader limb of pale rosy lilac fading off to white at the edge, and a golden spot fading to whitish occurs on the disk, which is without crests. *Column* short, thick, purple at the base, white upwards, with a broad wing edged with purple.

Miltonia Warscewiczii, *Reichenbach fil.*, *Xenia Orchidacea*, i. 129, 132; *Botanical Magazine*, t. 5843; *Williams, Orchid-Grower's Manual*, 6 ed., 415.

Oncidium fuscatum, *Reichenbach fil.*, in *Flore des Serres*, t. 1831; *Id.*, in *Walpers' Annales Botanices Systematicæ*, vi. 763.

This is one of the most distinct of the *Miltonias*, not only in its growth, but also in its flowers. It is a very beautiful species, and one that is much admired. It has passed under different names, which may be accounted for in some measure by its being a very variable plant. We imported a large quantity of this *Miltonia* many years ago, and amongst the plants then received there were several varieties, some of which are now known under other names, as will be seen by a reference to the *Orchid-Grower's Manual*. We have found it to be a free blooming species, and it does not require any very large space to grow it to perfection. We are indebted to Captain Shaw, Corbar, Buxton, for our sketch, which was taken from a well grown specimen. When grown as this plant was it cannot be other than a great favourite.

Miltonia Warscewiczii is an evergreen species, of epiphytical habit, with light green foliage, proceeding from the tall flattened pseudobulbs, which are also of a pale green colour. The flowers grow in panicles containing numerous blossoms,

which are somewhat crowded or closely set. The sepals and petals are dark brownish purple tipped with white, and the lip is of a velvety brownish purple margined with rosy lilac passing to white, which gives a roundish shape to the purple blotch in its centre; this blotch is a tranverse oblong shining patch, which from being glossy appears of a different colour; there is also a yellow spot on the disc. The plant blooms during winter and spring, and lasts a considerable time in beauty. It is a native of Peru and New Grenada.

We find this species to succeed well grown in a pot amongst rough fibrous peat and sphagnum moss, with perfect drainage; it is advantageous to mix some lumps of charcoal with the material, as it requires to be kept moist at the roots during the growing period, which is after the flowering season is over. This is the best time to repot the plants if they require fresh material about their roots. No stagnant moisture should be allowed to accumulate about the plants, as they require care. The soil must always be kept sweet and clean, and open, so that the water may pass away readily, as the roots do not like too much confined moisture.

We have found the Cattleya house the most suitable place for it, and here it should be set not too far from the light. A small amount of shade must be afforded during the time the sun is shining brightly, for if the plants get too much of the sun the leaves become yellow, and look unsightly. Nothing gives greater pleasure to the owner, nor a better finish to a plant, than the presence of nice green foliage, which is seldom seen among the species of *Miltonia*—a circumstance which is to be regretted, as there are many fine species and varieties comprised within the limits of this not very extensive genus.

Lælia elegans Wolstenholmiæ.—We have received from Mr. Hodges, gardener to E. Wright, Esq., Gravelly Hill, Birmingham, a very fine spike of this rare and splendid *Lælia*, bearing four expanded blooms. This is one of the most distinct and beautiful of its class, and one which we seldom have the pleasure of seeing. The flowers are large, being over six inches across, the sepals white marked at the edge with pale purple-rose, the petals being more deeply margined with the same colour; the lip is white at the base with a deep purple curved blotch about the throat, and rosy purple in front. John Day, Esq., of Tottenham, was the first to flower this plant many years ago, and a fine illustration of it will be found in the second volume of *Warner's Select Orchidaceous Plants*, at Plate 29.—B. S. W.

J Nugent Fitch del et lith

LÆLIA FLAMMEA

LÆLIA FLAMMEA.

[Plate 217.]

Garden Hybrid.

Epiphytal. *Stem* slender, cylindrical, about a foot high, the internodes covered with dusky sheaths which are of a darker brown at the tip. *Leaves* solitary, oblong-ligulate obtuse, of a dark green colour. *Peduncle* issuing from a compressed terminal pale brownish green spathe, and bearing from four to seven strikingly handsome blossoms. *Flowers* expanded, highly-coloured, measuring from four to four and a-half inches across; *sepals* (dorsal) recurved, lanceolate, entire, the lateral ones linear-falcate, deflexed, all of a brilliant tint of cinnabar, or deep rich orange red; *petals* also lanceolate, but somewhat broader than the sepals, of the same rich cinnabar or deep orange colour; *lip* about one and a-half inch long, three-lobed, the side lobes folded upwards over the column, orange-yellow slightly streaked with red veins, their blunt anterior ends spreading, the front lobe rounded, denticulate, blotched in the fore part, the discal portion without crests and veined with crimson. *Column* small, trigonous, white tinted with purple below the stigma.

Lælia flammea, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., i. 599; *Id.* v. 394; *Florist and Pomologist*, 1874, 133, with tab; *Williams, Orchid-Grower's Manual*, 6 ed., 358.

The new hybrid *Lælia*, represented in the accompanying plate, is most distinct, and a great acquisition to our collections on account of the beautiful colour of its flowers. Unfortunately it is very rare, there being, so far as we are aware, only a few plants of it in existence. It is the result of a cross effected in the establishment of Messrs. Veitch & Sons, of Chelsea, between *Lælia cinnabarina* and *Lælia Pilcheriana*, the latter being also a cross-bred form raised by the Messrs. Veitch, who have been most successful in their experiments in hybridising Orchids. This work has been accomplished by careful selection, and by perseverance in carrying out the object they have had in view; and it is by reason of these faculties that they have been so remarkably successful in obtaining good results, which are manifest in the numerous meritorious varieties they have added to our collections. There are also amongst our amateur cultivators some who are working out similar experiments, and we trust that their essays may likewise be productive of new floral gems, since this result would act as a strong stimulus to induce them to continue a pursuit which must be fascinating to those who take an interest in watching the development of their hybrids, although it may be a long time before some of them arrive at perfection.

Our drawing was taken from a well-grown plant in the grand collection of W. Lee, Esq., Downside, Leatherhead, where are to be found many other fine hybrid Orchids.

Lælia flammea is a distinct evergreen Orchid, which in its style of growth takes after *L. cinnabarina*, one of its parents. The stems grow from ten to twelve inches in height, and produce four to seven flowers on a scape, which grows up above the solitary leaf: each flower is as much as four inches across, and has the sepals and petals of a brilliant cinnabar orange colour, the lip, which is three-lobed with the side lobes yellow, folding over the column, and spread out at the tip, has the centre lobe rounded, denticulated, crispy, and of a rich crimson hue, the discal part being smooth and marked with crimson veins. The plant blooms in March and April, and continues in flower for several weeks.

Mr. Woolford, Mr. Lee's gardener, grows this plant in the Cattleya house, where it succeeds under his treatment. We have seen it blooming there on two different occasions, and it appears to be a free-flowering subject. It is grown in a pot, in rough fibrous peat, with good drainage, and receives during the growing season a moderate supply of water just sufficient to keep the material slightly moist. In fact, it requires the same treatment as *L. cinnabarina*, and should have plenty of light—indeed, it should be kept as fully as possible exposed to light, just sheltering it from the burning rays of the sun. This plant generally commences to grow after the flowering season is over, and it requires a good growing season, such as will admit of its ripening its bulbs. This thorough ripening of the new growth is one of the most important points of treatment towards securing the successful blooming of Orchids generally, as, indeed, of most other plants. These *Lælias* require attention during their season of rest, which is in the winter. The stems must not be allowed to shrivel for, if so, it will be difficult to bring about their recovery; therefore sufficient supplies of water should always be given to keep them plump. Another important matter is to search well for insects. Sometimes the white scale may attack the plants, but if closely watched for and removed on its first appearance, it will not become established to the permanent injury of the specimens. In this, as in other cases, and other matters, "prevention is better than cure."

Orchid Foliage.—We thoroughly believe in having good healthy foliage. We have seen Orchids grown in this country in houses which were not provided with any contrivance for shading. No doubt, under these conditions, the plants grow strong and robust, and they may also flower well, but their foliage is generally yellow and sickly-looking. Foliage of this kind cannot be beneficial to the plants. When, however, they are grown with a little shade, good healthy coloured foliage is obtained, and the plants bloom just as well as those subjected to the scorching regime. Of course there are Orchids that can endure the sun, and are much better for it—for example, many Dendrobes, some Cattleyas and Lælias, and a few others which can be found out by experience, or by trying a few of those kinds which are easy to procure. When they are found to do well, follow out the particular treatment adopted, and which is found best suited to the respective species. We do, however, put in a claim on behalf of fresh-looking foliage of a healthy green colour.—B. S. W.

Fitch del. et lith.

CALANTHE COLORANS.

CALANTHE COLORANS.

[Plate 218.]

Native of India.

Terrestrial. *Rootstock* stout, subterraneous, fleshy, marked with the scars of the older decayed leaves. *Leaves* several, springing from the crown of the rhizome, evergreen, spreading, broadly lanceolate acuminate, narrowing into a stalk-like base, strongly nervose, of a dark green colour. *Scape* erect, velvety, with appressed bracts below the dense pyramidal raceme, the upper bracts spreading, ovate acuminate concave; rachis green. *Flowers* very numerous, white, the lip at length ochraceous; *sepals* obovate-oblong, mucronate, spreading, about half an inch long; *petals* similar in form and colour, but rather smaller; *lip* projected forwards, three-fourths of an inch broad, three-lobed, the lateral lobes linear-oblong, broadest at the bluntly rounded apex, the middle lobe triangular, deeply parted into two widely divergent unequally obovate segments, by reason of which the lip appears to be four-cleft; discal base of lip bearing three small yellow crests, of which the two hinder ones are laterally compressed, and the front one is acute; *spur* filiform, shorter than the ovary, bidentate at the apex.

Calanthe colorans, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xxiv., 360; *Williams, Orchid-Grower's Manual*, 6 ed., 633.

We are glad to be able to illustrate a new species of *Calanthe*, one of the *veratrifolia* section, which was introduced by ourselves, and has been named by Professor Reichenbach. There are but few species of this most useful genus that flower during the spring and summer months. *C. veratrifolia* is a very old plant; in fact we may say it is one of the oldest and most accommodating of Orchids in cultivation; it is a plant that can be grown into large specimens to adorn the exhibition table, as it has been for many years, and can be shown at any time during a period of two months. In our houses it may be kept flowering for three months, and its pure white flowers may often be seen in stoves where no other Orchids are grown. The individual blossoms used singly are very useful for bouquet and button-hole purposes, and may be had fresh for a lengthened period, as the spike continues elongating until the last flower has opened. It is, moreover, of very strong growth, and each crown bears several spikes of flowers.

The species we now bring under the notice of Orchid growers is one that will be equally useful during the months of July, August, and September, for during these months Orchid flowers are scarce, and on that account it will be found especially valuable. We bloomed this plant for the first time in Europe last year, and our drawing was taken from the specimen then flowered.

Calanthe colorans is a terrestrial Orchid of considerable merit, and is of the same evergreen habit as *C. veratrifolia.* It has broadly lance-shaped dark green foliage, and produces its erect flower spikes, which are not quite so tall as those of the species just named, in a similar manner from amongst the persistent leaves. The white flowers, whose lips change gradually to an ochre or buff colour as they become aged, have a double tooth at the end of the spur; they continue for three months in beauty, being somewhat stouter in texture than those of *C. veratrifolia,* from which in its general appearance the present species is quite distinct. According to Professor Reichenbach, *C. odora* and *C. vaginata* are amongst its near allies.

This plant requires the same treatment as that given to *C. veratrifolia.* It is quite different in character from the species of the *C. vestita* section, which make fresh roots annually, their pseudobulbs being deciduous, and their roots decaying, so that they require fresh potting every year. *Calanthe colorans,* on the other hand, is of persistent habit. It is an Indian species, and is found growing in grassy places, which indicates that it is terrestrial in character. It therefore requires to be cultivated in pots of tolerable size, as its large fleshy roots require space for extension and pasturage; it likes to feed on good fibrous loam mixed with some leaf mould, and having also incorporated a few lumps of charcoal, which keep the material open—a necessary point in successful cultivation, as the plants require to be kept moist at the roots during the growing season, which succeeds the period of flowering. This occurs during the autumn and winter months, when they begin to make fresh roots and growths. To secure the free passage of water, they should have about two or three inches of drainage, according to the size of the pot, and some rough coarse material should be placed over the drainage to keep it open. We generally place the rhizome or rootstock in the soil, so that it is about one inch below the pot rim. If they should not require repotting, remove the old soil from the top, and fill up with good fresh compost. When the plants are in vigorous growth, a little weak manure water will help to impart to them greater vigour, but once a fortnight will be sufficient for this application, which requires care and forethought.

The East Indian house, or a warm stove, will suit the plants, but they must be shaded from the hottest sun, or their foliage may get scorched, and this is a great deterioration of the beauty of a plant. The foliage, in this instance, being of a glossy lively green colour, forms, with the spikes of white flowers, a picture of a very handsome and elegant character.

Insects should be kept well under. Sometimes the brown scale may make its appearance, and if allowed to get established so as to become numerous, will greatly disfigure the foliage.

Lælia anceps Hilliana.—We have received from C. J. Partington, Esq., Heaton House, Cheshunt, flowers of a grand variety of this beautiful novelty. It is in every respect superior to the plant figured at plate 146 of our fourth volume, the sepals and petals being larger and much broader; the lip is also larger in all its parts. The colour is identical with that represented on our plate. This is the finest variety we have seen, and Mr. Partington is fortunate in obtaining such a prize.—B. S. W.

J.Nugent fecit del. et lith.

CATTLEYA TRIANÆ RUSSELLIANA.

CATTLEYA TRIANÆ RUSSELLIANA.

[Plate 219.]

Native of New Grenada.

Epiphytal. *Stems* clavate oblong, furrowed, clothed in the lower parts with pale membranaceous sheaths. *Leaves* leathery, ligulate-oblong obtuse, emarginate, solitary, pale green. *Scape* two to three-flowered, issuing from an oblong compressed terminal sheath. *Flowers* very large, six inches in expansion, richly coloured; *sepals* lanceolate, entire, plane, recurved at the tips, three and a half inches in length, of a pale rosy blush; *petals* similar in colour, very broadly ovate, bluntish, frilled and denticulate at the edge, three inches long and upwards of two inches broad, spreading; *lip* almost three inches long, stout in texture, the base entire and appressed so as to close up over the column and to form an oblique-mouthed funnel, the margin being continued so as to meet over the throat, the anterior and upper edge entirely of an intense crimson-magenta extending from the margin backwards in a wedge-shaped form to within the tube, behind which, reaching to the base of the column, is a two-lobed area of unspotted orange-yellow. *Column* enclosed, clavate, whitish, rosy-purple at the basal margins.

Cattleya Trianæ Russelliana, *Williams, Orchid-Grower's Manual*, 5 ed. 134; 6 ed. 205.

There is no doubt that the *Cattleya* figured in the accompanying plate is one of the finest of the varieties of the *Trianæ* group. Its flowers are of a most brilliant colour, and of fine form and firm substance; in truth it possesses every good quality a flower can have, so much so that it is a difficult matter to do justice to it in the space at our command, the spikes of the flowers being so large. This Cattleya was, many years ago, in the collection of the late Provost Russell, of Falkirk, N.B., after whom we named it, and it was then described in the *Orchid-Grower's Manual*. Since that time it has passed into the grand collection of Baron Schröder, The Dell, Staines, where it has bloomed for several years, and is now in a very vigorous condition, having borne as many as sixteen flowers at the time when our drawing was taken last year. It is still a rare plant, there being only a few others known, and they are offshoots from the original specimen.

Cattleya Trianæ Russelliana is an evergreen plant, with the usual club-shaped stems and fine dark green foliage; it is of good habit, and free in the production of its fine racemes of flowers, which grow several together on the spike. The sepals are three and a half inches long, and upwards of an inch broad; the petals are upwards of two inches broad, wavy at the edge and recurved, white tinged with rose; the lip is two inches across, with the edge beautifully frilled, the throat bright orange, and the front lobe intense crimson-magenta, the colour being well carried back

into the throat, and being as dark at the margin as at the base. It is a fine winter-blooming *Cattleya*, and lasts some time in bloom.

This specimen has been grown on by Mr. Ballantine from a moderate-sized plant, and is now one of the most vigorous plants in the collection, and in perfect health. It is grown in a pot, under the same conditions as the other forms of the *Trianæ* section, that is to say, it is potted in rough fibrous peat with good drainage, and is grown in a light house where it receives the full benefit of the day light, with very little shade. A moderate supply of water is given during its period of vigorous growth, but Mr. Ballantine is very careful not to give too much water during its resting time, allowing it only just enough to keep the stems in a plump state. We have frequently observed that some growers give their plants far too much water; this may do no great harm at first, but in the end it will be found detrimental to their health, and they will tell the tale in time. Water may be distributed among the pots instead of being used to soak the material that is about the crown and roots. Nature seems to tell us they do not require excessive watering; for in their native country they reap the full benefit of the breezes, and these, which they do not get in our Orchid houses, help to evaporate and carry off much of the moisture caused by the rain. In our experience we have often seen collections thriving for a time under the influence of too much of some one good thing or other, and we have noticed growers getting excited if they see a plant growing vigorously through the influence of these stimulants; it is, however, far better and safer to give too little than too much of them. No doubt there are certain houses that plants take to, or do better in, than in others; a great deal of this, however, may depend upon the locality in which they are placed, as we have previously indicated.

Watering Orchids.—The application of water, and the proper drainage of the soil are two of the most important points in Orchid culture, much more so than some people imagine. Every person who grows Orchids should know the state of the drainage of every individual plant under his care, and of the material in which it is potted, so that he may be able to judge of the proper quantity of water to be given during the growing season and also during the season of repose. This is an all-important study. Water should not be thrown at random over the plants, but each one should be carefully supplied according to its requirements. We do not approve of over-watering the plants: moderation is by far the best principle by which to guide the operation. One cultivator may affirm that he keeps his plants wet, and that under this regime they thrive well; possibly they may do so, but that is no reason why another cultivator should follow this example. In the first place, the house in which the wet treatment succeeds may be differently situated as to aspect, or may be larger and better heated, so that more ventilation can be given, besides which there might be many other causes to account for the plants succeeding. It is in such cases that close observation of the situation of the house becomes necessary—whether in sheltered or in exposed situations, or whether the houses get all the sun and the winds. If in an open country, different treatment will be required from that which would be suitable in a sheltered place.—B. S. W.

PACHYSTOMA THOMSONIANUM.

B S Williams

PACHYSTOMA THOMSONIANUM.

[Plate 220.]

Native of West Tropical Africa.

Epiphytal. *Pseudobulbs* on a trailing rhizome, roundish depressed, sulcate, an inch in diameter, clothed with a deep green membrane, which later on becomes a brownish coat to the bulbs (tunicate). *Leaves* oblong-lanceolate, acuminate, membranaceous, solitary or in unequal pairs, the largest about six inches long, plicate, palish green. *Peduncles* radical, one or two from each bulb, six to eight inches high, slender, bearing from three to four flowers, green, with a few lanceolate loosely appressed brown bract-scales. *Flowers* rather large, stoutish, spreading, very remarkable for the form of their lip; *sepals* lanceolate acuminate, the dorsal larger, erect, one inch and three-quarters long, and half an inch wide, the lateral ones smaller, directed downwards, obliquely affixed to the deflexed connate base of the lip, white; *petals* narrow lanceolate, about the same size as the lateral sepals, white; *lip* fleshy, adnate to the foot of the column, incumbent, the front portion erect, sulcate at the base, three-lobed, the middle lobe smaller, triangular, linear acuminate, with three streaks and edge of deep magenta-purple, the lateral lobes larger, erect, conchoid or obtusely ovate or subquadrate, greenish, freely striate inside with brown-red, from the presence of short minute brown papillæ, with which the whole surface of the lip and column is covered. *Column* clavate, arched, subterete in its free portion, green streaked with red-brown.

Pachystoma Thomsonianum, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xii., 582; *Id. Xenia Orchidacea*, iii. t. 213; *Gardeners' Chronicle*, n.s., xii., 623, 627, figs. 102, 103; *Id.* xviii, 501, fig. 87; *Botanical Magazine*, t. 6471; *Williams, Orchid-Grower's Manual*, 6 ed., 507, with figure.

This is a small genus of Orchids consisting mostly of Tropical Asiatic species, a single one only, which we here figure, being a native of Tropical Africa. This indeed, is the only one that has come under our notice which is worth cultivating. *Pachystoma Thomsonianum*, our present subject, is a very pretty and very curious dwarf-growing species, worthy of all the care that can be bestowed upon it. The accompanying illustration gives a good idea of the plant, which is very rare. For the opportunity of figuring it we are indebted to Sir Trevor Lawrence, Bart., M.P., of Burford Lodge, Dorking, whose collection abounds in rare species and varieties of the Orchid family.

Pachystoma Thomsonianum is, as we have said, a very pretty species, and comes from Tropical Africa. It is allied to *Ipsea*, and produces its erect slender scapes from the base of the depressed globular furrowed pseudobulbs; these scapes bear each from three to four flowers, which measure about three inches across, the dorsal

sepal being larger than the rest, and both sepals and petals being of a pure glistening white; the lip is one inch long, white, marked with broad reddish purple streaks. The plant blooms in October and November, when flowers are in request.

We find this species requires the heat of the East India house, and Mr. Bickerstaff, Sir Trevor Lawrence's gardener, grows it in sphagnum moss and fibrous peat with good drainage. It requires to be kept well in the light, but shaded from the hot sun, and must have a moderate supply of moisture about its roots. These small dwarf-growing plants require much care, but they are well worth it, for they are gems in their way, and where interest is taken in their welfare success in their cultivation will follow. They require closely watching, as small plants are frequently lost sight of through the larger more showy kinds obtruding themselves on one's attention. But we are gratified to know that many growers now give these small-growing kinds a greater share of their attention than was once the case.

Risks of Orchid Culture.—A great many of our Orchids are very easy to cultivate. Moreover, they will endure more hardships than most people are aware of, but, like other plants, they require ordinary attention, and this attention must be given at the proper time. There is no difficulty whatever in the case of many species. Occasionally, however, failures occur through circumstances over which we have no control. Sometimes the plant may get exhausted through disease, which might have been checked if operated upon in time. Sometimes the pseudobulbs rot away, but this may often be remedied by cutting off all the decayed parts, and, when this is done, applying some dry sulphur or charcoal, which should be rubbed over the cut surface in order to dry it and prevent the rotting from going further. There are other things that cause the roots to decay, and among these are the errors of keeping them too wet or too dry. In the latter case the plants often shrivel and thus get into a bad state of health; the evil may indeed go so far as to quite destroy their vitality, but even if they are not killed outright it will take a long time for them to recover their vigour. This is especially the case with such subjects as those species of *Cattleya* and *Lælia* which have tall, thin, wiry stems. Sometimes the blooming of a plant will be detrimental to it, especially if in a weakly state; if such is the case, the buds should be removed before they attain any great size, or should this not be done, the flower spike itself must be cut off, by which rather severe treatment the plant will be greatly benefited for another year. The result in such instances is worth the sacrifice, as the plant will become much more vigorous, and be enabled to endure any ordinary strain that may be placed upon it. Secure strong pseudobulbs, good roots, and healthy foliage, and then flowers with some substance in them—a most important point—may be expected to follow.—B. S. W.

DENDROBIUM JAMESIANUM.

DENDROBIUM JAMESIANUM.

[Plate 221.]

Native of Burmah.

Epiphytal. *Stems* slender, jointed, terete, furrowed, one to one and a half foot long; the internodes clothed with the membranaceous sheaths of the leaves, the sheaths being nigro-hirsute when young. *Leaves* oblong lanceolate, acute. *Scapes* short, blotched with brownish red, about two-flowered, terminal. *Flowers* three and a half to four inches across, of a very showy and attractive character; *sepals* plane, entire, lanceolate-triangular acute, spreading, the lateral ones produced behind into a conical spur, of a pure snow white; *petals* much broader, one and a quarter inch across, roundish ovate in outline, apiculate, the base cuneate, the central portion longitudinally veined, white; *lip* about one and a quarter inch long, cuneately flabellate, three-lobed, the lateral lobes rounded, crenate in front, folded over the column, the surface asperous, the front lobe quadrate with the apex dilated and retuse, apiculate, the margins wavy, white with a large cuneate-oblong blotch of deep cinnabar red on the discal area between the lateral lobes, the sides being marked with divergent streaks of the same cinnabar red colour. *Column* thickened at the base, sharply eared on both sides of the apex.

Dendrobium Jamesianum, *Reichenbach fil.*, in *Gardeners' Chronicle*, 1869, 554; 1871, 412; *Moore, Florist and Pomologist*, 1869, 187, with fig.; *Williams, Orchid-Grower's Manual*, 6 ed., 228, with fig.

The species we figure on the accompanying plate is for decorative and exhibition purposes, one of the most chastely beautiful, as well as one of the most lasting, accommodating, and useful of the genus. It is of a free habit of growth, and can be cultivated either in a cool house with Odontoglots or in a warmer compartment where it gets light and heat. This species is a great deal like *D. infundibulum* in its growth, its flowers and its requirements, though the stems of the latter are longer and generally taller and more slender; it blooms in the same way, and is of the same duration as regards the effectiveness of its blossoms. We had several hundred flowers produced during our Orchid exhibition last year, and found them most useful for placing in masses among the Ferns, Palms, &c., and for mixing with the brighter colours of the other Orchids. White flowers are, indeed, always in request. This fine Dendrobe can now be bought at a moderate price, so that it is within reach of every cultivator. Our drawing was taken from one of the plants which bloomed in the Victoria and Paradise Nurseries.

Dendrobium Jamesianum was imported from Burmah. It is one of the nigro-hirsute species—those with black hairs on the membranaceous sheaths of the stems—and grows from a foot to a foot and a half in height, producing its flowers several

together, from the top and sides of the stems after they have completed their growth; each individual flower being three or more inches in diameter, according to the strength of the plant. The blossoms are pure white, with the exception of the lip which is deeply stained with cinnabar-red. The usual time of flowering is during the spring and summer months, and the blossoms continue in perfection for several weeks if they are kept free from extraneous moisture. When in blossom it is advisable to place them in a drier atmosphere in order to keep the pure white flowers in perfect condition, for if allowed to get damp they will soon become spotted and unsightly.

This Dendrobe may be kept in a thriving condition, provided it receives the requisite treatment. We find it does exceedingly well in the Odontoglossum house, at the warmest part, if kept near the light, and where it can obtain abundant air, in order that the growths may become strong and vigorous. We saw some of this stamp in the collection of R. H. Measures, Esq., which were producing some fine blooms in the month of December, having previously flowered in the month of June. The pseudobulbs from which these flowers were produced were the largest we ever remember to have seen, and the flowers were correspondingly large. This proves that by having strength of bulb or stem their flowers may be produced at different times of the year, and when they come to enliven the dull winter months they are doubly welcome. The material in which to pot this *Dendrobium* consists of rough fibrous peat and sphagnum moss, with thorough good drainage, and when grown in pots they should have some lumps of charcoal mixed with the soil, as the plant requires always to be kept moist during the growing season; when at rest just enough moisture must be given to keep the stems plump. When the plants begin to show blooms give them a little more at the roots, in order to encourage the development of flowers of large size. After the blooming season is past they will soon begin to grow, and this is a good time to repot them if they require it. If they do not require fresh potting a little fresh peat or moss will be beneficial to them, and should be applied by removing a small portion of the old soil and replacing it with fresh, at the same time seeing that the drainage is perfect. Look closely after insects, removing them if they put in an appearance so as to keep the plants scrupulously clean.

ODONTOGLOSSUM BLANDUM.

[Plate 222.]

Native of New Grenada.

Epiphytal. *Pseudobulbs* ovate, somewhat compressed, about an inch long, of a pale green colour. *Leaves* narrow lanceolate acute, tapered to the base, six to nine inches long, of a light green colour. *Peduncles* lateral, sometimes three or four from one pseudobulb, each supporting an arching raceme of from eight to ten or more flowers, which have a honey-like fragrance. *Flowers* very elegant, stellately spreading, and having somewhat the aspect of those of a small form of *O. nævium*; *sepals* cuneate at the base, narrowly lanceolate, the apex attenuately acuminate, white, decorated with numerous crowded spots of brownish crimson; *petals* similar in size and form, as well as in colour and marking; *lip* white, with a bilamellate claw, the lamellæ oblong, blunt-angled in front, the blade broad, of an ovate outline, acuminated, somewhat crisped at the margin, and having a pair of blunt horns in front of the lamellæ, the front part lightly spotted with brown around the edge, and with a pair of large spots on the narrowed part; disk yellow, with a pair of falcate processes standing in front of the blunt oblong lamellæ. *Column* furnished with bifid, setaceous cirrhi.

Odontoglossum blandum, *Reichenbach fil.*, in *Gardeners' Chronicle*, 1870, 1342; *Bateman, Monograph of Odontoglossum*, t. 28; *Williams, Orchid-Grower's Manual*, 6 ed., 425.

We have from time to time illustrated a considerable number of the species of Odontoglots, many of which bear large, finely-coloured, and abundant flowers. We now have the great pleasure of bringing under the notice of our readers one of the same family group, requiring but little space for its accommodation, and one which is a gem among this class of Orchids. It is, moreover, a free-blooming subject, producing its short graceful spikes of pretty spotted flowers in profusion; indeed, there are but few species of this diminitive class that are so attractive. It resembles *O. nævium*, with the exception that *O. nævium* produces larger pseudobulbs and flowers. It is still very rare, though it is one of the oldest of cultivated species. We have not known of *O. nævium* being imported, although many have been sold for it, which have proved to be *O. gloriosum*. *O. blandum* is not a common plant, but there are several varieties of it. Our drawing represents the true or type form, and was taken from a beautiful plant in the collection of R. Smith, Esq., of Brentham Park, Stirling, who has grown some fine specimen Orchids.

Odontoglossum blandum is a native of New Grenada; it is a dwarf-growing species of evergreen character, with light green foliage, and closely resembles a dwarf form of *O. nævium*; it produces its floral racemes, which are about six inches in length, from

the sides of the pseudobulbs, and sometimes three and four spikes issue from the same bulb. The flowers are white and handsomely spotted; the sepals and petals, which are equal in size, cuneate-lanceolate acuminate, with creamy white, beautifully dotted and freckled with maroon-crimson, with the lip of the same colour, broad and crispy at the edge. The plant blooms during winter, and lasts several weeks in beauty. The flowers give out a sweet honey-like fragrance. This plant is grown by Mr. McCleod, gardener to R. Smith, Esq., in the Odontoglossum house, with the same treatment as *O. crispum*. It is found to be of free and easy growth, and when the plant is in vigorous health it produces its spikes of flowers abundantly; while, being a small-growing species, it is best placed near the glass, but shaded from the hot sun. These small-growing kinds all require more close attention than the large-growing Odontoglots, and they are worthy of all the care that can be bestowed upon them.

Death of R. P. Percival, Esq., Southport.—It is with great regret that we have to record the death of R. P. Percival, Esq., of Southport, whose name is well-known among Orchid growers. Mr. Percival had been for some years a great admirer of fine plants, and his collection had gained much fame at the Manchester exhibitions, where some of the most wonderful Orchids have been exhibited by him. He was especially an admirer of well-grown specimens; and there is no doubt that both he and his gardener studied their requirements more than many persons would imagine. It was astonishing to find the large amount of knowledge of plant culture that Mr. Percival had acquired in a few years. He was a great reader and studied everything that could be brought to bear upon the well-being of these wonderful plants. It was always a great treat to spend a day with him in his Orchid houses, for he so thoroughly went into the subject of their culture and habits that a great deal could be learned from him; indeed, he knew almost every plant—its history, locality, and requirements, as far as could be ascertained. In fact, if he took anything in hand, whether plants or any other subject, he never gave up until he had gained his object, and through his perseverance and energy we believe he always succeeded. He was a most kind-hearted, genial man, as all those can certify who had the good fortune to visit him, and will be greatly missed by his acquaintances and friends. We deeply regret that in him we have lost one of the most enthusiastic of Orchid growers, for he not only built houses to suit the different genera, but had brought together a large collection of these fine plants, and had he been spared a few years longer his collection would doubtless have been complete.—B. S. W.

J. Nugent Fitch del et lith

CYPRIPEDIUM LEEANUM.

CYPRIPEDIUM LEEANUM.

[Plate 223.]

Garden Hybrid.

Epiphytal. *Stemless*, of neat dwarf habit, with distichous, spreading, evergreen foliage. *Leaves* linear-oblong acute, the upper surface green, the sheathing base spotted with purple. *Scapes* or *Peduncles* erect, pubescent, of a dark reddish purple, with bracts of the same colour. *Flowers* large, solitary, four inches across from tip to tip of the petals; *dorsal sepal* very large, fornicate, the apex on both sides of the costa further inflexed, one and three quarter inch long by two inches across, roundish in outline when flattened, the base green spotted with purple for a depth of about half an inch, the rest white, the upper third part being unspotted and the remainder thickly spotted in lines with rich purple, the spots larger and closer on the line of the costa forming a broken purple central bar or stripe; *petals* oblong obtuse, two and a half inches long, laterally decurved, the upper edge wavy the lower one plain, the ground colour tawny marked with close set longitudinal purplish red veins, of which one is shorter than the rest, a few spots and hairs at the base, and the margin having a narrow even edge of pale yellowish green; *lip* pouch-shaped, ovate, with the upper edge straight and the hinder margin rounded, brownish purple and veiny outside, the inside yellowish marked with reddish purple veins, the edge tawny yellow as is the roundish obovate *Staminode* which bears an orange-yellow spot towards the front and a tuft of reddish brown hairs at the base.

Cypripedium Leeanum, *Veitch MS.; Williams, Orchid-Grower's Manual*, 6 ed., 249.

Hybrid Cypripediums are becoming very numerous. As a class of free-blooming Orchids they are wonderfully useful, although many of them bear rather too close a resemblance to each other; still, there are many that are beautiful, and scarcely any that may not fairly be described as perfectly distinct. That which we are about to describe, *Cypripedium Leeanum*, is a most charming and desirable kind, the result of a cross between *C. Spicerianum* and *C. insigne Maulei*. It was raised by Mr. Seden who has been successful in obtaining many choice hybrids for the Messrs. Veitch and Sons. The new hybrid was exhibited by the Messrs. Veitch in January, 1884, at one of the meetings of the Royal Horticultural Society, and in the following year, 1885, it was shown by Sir Trevor Lawrence, Bart., M.P., who had succeeded by hybridizing in obtaining the same form, there being very slight variation among the seedlings, although the plants from Sir Trevor Lawrence's batch were numerous. It is a remarkable coincidence for two persons thus to effect the same cross with identical results. Our figure was taken from the original plant in the collection of W. Lee, Esq., Downside, Leatherhead, in whose honour it was named by the Messrs. Veitch and Sons.

Cypripedium Leeanum is an evergreen plant, resembling *C. Spicerianum* in foliage, the leaves being about six inches in length, of a lively green, and the plant of good habit. The scapes are produced from the centre between the leaves and grow up well above the foliage, bearing the handsome flowers, each on a separate scape. The flowers have the dorsal sepal broadly ovate, curved forward, pure white, similar in form to that of *C. insigne Maulei*, but having a distinct broad dotted line down its centre; the base is emerald green with radiating spots of mauve running upwards into the white part; the petals resemble those of *C. insigne Maulei*, while the lip is of a shining brownish red. It blooms during winter, and lasts in flower for several weeks. The plants appear to be free in the production of blossoms.

We consider the Cattleya house the most suitable place for it. It is a free-rooting plant, and requires a good compost of rough fibrous loam, leaf mould, and charcoal intermixed, with good drainage. The pots should be half filled with crocks and moss placed on the top of them, in order that the material may be kept well open so as to permit the water to pass away without becoming stagnant. These plants require the soil to be kept moist during the growing season, which is after the flowering is over, and we find this also to be the most suitable time to re-pot them, as their roots then come forth with fresh vigour. During their resting season they require moisture, having no fleshy bulbs to support them. They should have all the light possible; care should, however, be taken to keep the sun from scorching the foliage, but when the heat of the day is over a little sunshine will not harm them.

Potting Orchids.—The potting of the plants is a very important operation. Some growers prefer to leave their plants to be potted all at the same time; this plan, however, may not suit all the specimens, as some may require potting before others, and they may not all at the same time be in such a state that they can bear it. If the soil is seen to be sour and soddened, remove it and cleanse the roots at once, as when in that state any delay would be dangerous. Some plants may only need top dressing, that is, taking away the old soil and replacing it with fresh material; in doing this be careful not to injure the roots or the young growths. Care should be taken not to expose the roots if they are accustomed to be covered up. If not it does not signify, as some roots like to grow outside the pots or baskets exposed to the moist atmosphere.—B. S. W.

J.Nugent Fitch del. et lith.

MASDEVALLIA HARRYANA ARMENIACA.

MASDEVALLIA HARRYANA ARMENIACA.

[Plate 224.]

Native of New Grenada.

Epiphytal. *Stems* short, tufted, slender. *Leaves* evergreen, tall, leathery in texture, spathulate acute, keeled behind, channelled at the base, tapering below into the petiole, the base of which is surrounded by a pallid membranaceous sheath, within which the scape or peduncle is also sometimes enclosed. *Scape* radical issuing from the before-mentioned sheath, slender, one-flowered. *Flowers* very distinct in colour from other varieties in cultivation, bright and remarkably effective; *dorsal sepal* ovate at the base, suddenly recurved and narrowed into a linear awl-shaped form, one and a half inch long; the two *lateral sepals* two inches across and somewhat more in depth, the inner side nearly straight, the outer convex, so that each takes a semi-ovate form, the point being acute or shortly acuminate and curved laterally inwards; the colour is rich deep apricot streaked with flame red, that of the short curved *tube* pinkish yellow, the mouth or eye rich yellow.

Masdevallia Harryana armeniaca, *Williams, Orchid-Grower's Manual*, 6 ed., 637.

We have no hesitation in stating that this is one of the most distinct Masdevallias that have been flowered of late, the colour being quite different from that of other varieties that have come under our notice. This distinction of colour makes it valuable in collections, as many of the cultivated forms are too nearly alike in the colours of their flowers. This group of Orchids has increased very much of late years, and there have been many brilliantly coloured species and varieties brought home by our energetic collectors to enrich our stoves, so that a wonderful effect can be produced, by skilful arrangement, of these brilliant Masdevallias alone. They are also free Orchids, as regards making stock, and free blooming; they can be grown to perfection in a cool Odontoglossom house, and take up but little space in comparison with the amount of flowers they produce. Their long duration, and the fact of their flowering at different times of the year are other good qualities, so that we are never without some of these plants in bloom. We are indebted to R. H. Measures, Esq., Woodlands, Streatham, in whose fine collection this plant bloomed for the first time last year, for the original of our drawing, and the stock of this rare and valuable variety is in Mr. Measures' possession.

Masdevallia Harryana armeniaca is a most distinct and beautiful variety. It has dark green foliage, and grows about ten inches in height; the blossoms are roundish in outline, two inches in diameter, and of a deep apricot colour, resembling some of the varieties of *Azalea mollis*, the eye being of a rich yellow. It flowers

in May and June, and lasts a long time in perfection. Mr. Howe, Mr. Measures' gardener, cultivates it with other forms of the *Masdevallia Harryana* section in the Odontoglossum house.

If one possesses a large number of Masdevallias, of course, it is well to have a house entirely for their culture, but they require more shade than the Odontoglots. We have found this plan succeed well, and others have done the same; although we have frequently found them flourishing well with the Odontoglots, with rather more shade than the latter require. The best material for their roots is peat and sphagnum moss, with perfect drainage; a few lumps of charcoal being mixed with the soil to keep it open; the charcoal also helps to keep it sweet, and is beneficial to the plant, since it requires a good deal of water during its active growing and flowering period. In fact these plants should nearly always be kept moist at the roots, as they are generally in an active state. Slight syringing between the pots should be given on all fine days in summer, or even twice a day when the weather is warm and dry.

These plants are easily propagated by division of the tufts, a few leaves being taken off with young growths. We find the best time for this operation to be just as they are starting to grow; it must also be done when the plant is in a good plump vigorous condition.

Orchids in Manufacturing Districts.—When Orchids have to be grown in or near manufacturing towns where the atmosphere is smoky and moist, and a general dullness prevails, the treatment must be different from that of localities with a purer atmosphere. In this case more fire heat will be necessary, and less moisture must be used inside as the outer atmosphere is loaded therewith, especially during the autumn and winter. To counteract all this, one requires to use judgment, and it is really astonishing to see how the Orchids succeed under such trying circumstances, so that there may be found some wonderful collections, notwithstanding the difficulties with which they have to contend. Many other plants would perish where Orchids thrive under good care. Even around London, where fogs are often very dense, the plants do not seem to be very much affected, but many of the flowers cannot stand the fog, though there are some which it does not seem to affect, as *Odontoglossum crispum*, *O. Pescatorei*, and others. Some day means may be found to prevent the fogs from injuring the flowers. In the country one does not have these disadvantages to contend with, and consequently the flowers can be had in beauty all through the winter season without any risk.—B. S. W.

J.Nugent Fitch del.et lith

CATTLEYA MENDELII BELLA,

CATTLEYA MENDELII BELLA.

[Plate 225.]

Native of Colombia.

Epiphytal. *Stems* oblong, club-shaped as in the type, twelve to eighteen inches high, monophyllous. *Leaves* coriaceous, ligulate-oblong, of a dark green colour. *Scapes* two or three-flowered, issuing from a compressed oblong terminal bluntish bract or sheath. *Flowers* of large size, expanding nearly or quite seven inches in both directions; *sepals* lanceolate, entire, plane, recurved at the tips, of a very pale blush white, one and a quarter inch wide; *petals* broadly ovate, three inches across, the margins gently undulated, and in the anterior part denticulated, of a delicate blush white, with a paler bar down the centre; *lip* ample, obovate, with the front rounded deeply emarginate, lobe two and a half inches across and of the same width, the basal half entire, rolled over and enclosing the column, the anterior lobe squarish in outline, with about one half of its surface golden yellow veined with paler yellow, and having the edge, which is spread out and meets over the throat, whitish as is also the exterior of the tubular portion; the other or front half is of a fine bluish mauve colour shaded by a darker mauve lilac, traversed by flabellate and more or less anastomosing white veins, which produce a remarkably fine contrast. *Column* enclosed, decurved, semiterete.

Cattleya Mendelii bella, *Williams and Moore, supra.*

Cattleya labiata bella, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xvii., 700.

There is no doubt that the varieties of *Cattleya* of the section represented by *C. Mendelii* are amongst the most beautiful forms of this very handsome genus. They include amongst them many forms and numerous variations of colour, from pure white to mauve and rich magenta-crimson, having the labellum blotched with rich shades of orange and yellow. The variety, of which we now present an illustration to our readers, is a very distinct and beautiful one, which is also a free grower and a profuse bloomer, and is, moreover, a rare plant. We are indebted, for the opportunity of figuring it, to G. Hardy, Esq., Pickering Lodge, Timperley, in whose fine and well-grown collection of Orchids this plant formed a conspicuous feature. We consider it to be a great acquisition to the genus.

Cattleya Mendelii bella is like *C. Mendelii* itself in its habit of growth. It bears leathery oblong leaves of a dark green colour, and very large and showy flowers which stand out boldly above them, and are of fine form and firm substance. The sepals and petals are blush white, and the lip in its posterior part is of a fine golden yellow veined with paler yellow, and in its anterior part of a dark mauve-lilac veined with white. The flowers are produced during the months of May and June, and last for three weeks in perfection if they are kept free from damp.

There is no question that Mr. Hardy has some of the most admirably grown Cattleyas in this country, and that his gardener, Mr. Hill, attends well to all their requirements, being aided by the fine well-proportioned Orchid-houses at Pickering Lodge, which are of good size, so as to admit abundance of light, and are also so constructed that the specimens can be placed near the glass, which is a most necessary point towards insuring success in cultivation. The plants thus get plenty of room for their development, and have but little shade to keep the burning sun from them. They are grown in rough fibrous peat and sphagnum moss, and they are very carefully attended to as to watering, which is most essential, both during the growing season, when they require a fair supply, and also in their period of rest, when smaller quantities suffice.

We find that if Cattleyas get their proper treatment, as briefly sketched above, they produce more abundantly their large and brilliantly-coloured flowers, which, for magnificence, cannot be surpassed. Owing to the large importations that are continually arriving in Europe, the various Cattleyas can now be bought at a moderate cost, and are thus brought within the reach of every grower.

Arrangement in Orchid-houses.—Orchids as well as other plants should be nicely arranged; indeed, with these it is most essential, for they require all that can be done to give them a good appearance, some of them being rather unsightly when not in bloom, as flowers are required to set off the foliage. The plants themselves are more valuable when well grown and furnished with good foliage, which will be the case when they are well looked after and kept clean. In arranging Orchids it should be a constant endeavour to get variety of colour, so that a cheerful and pleasing picture may be maintained. The necessary attention must be given at the proper time. When anything requires to be done it must not be put off, for delays are dangerous; one is apt to forget, and so an evil commences which sometimes cannot be remedied. The whole house of plants may not require extra attention at one time, but those must be looked after that do require it; for example, when the whole of the plants in a house are dirty it will take a long time to cleanse each one separately, and some may become spoiled before they can be attended to.—B. S. W.

LÆLIA FLAVA

LÆLIA FLAVA.

[Plate 226.]

Native of Brazil.

Epiphytal. *Stems* short, ovate, pseudobulbous, a few inches in height, invested with close overlapping membranous sheaths. *Leaves* evergreen, oblong acute, plane, longer than the pseudobulbs, usually solitary, of a leathery-fleshy texture, and tinged with brownish-red on the costa beneath and along the margin. *Scape* erect, about a foot high, the base clothed with a few sheathing scales, green, terminating in a cylindraceous raceme of nine or ten flowers, the pedicels having small ovate keeled bracts at their base. *Flowers* rather small in size, but striking in colour, which is everywhere of a deep yolk-of-egg yellow; *sepals* linear-oblong obtuse, an inch long, about equal in size, somewhat recurved, and distinctly channelled; *petals* about the same size, form, and colour as the sepals, standing forward like a pair of horns; *lip* shorter than the sepals, oblong, the middle front portion obtuse, recurved at the tip, minutely but prettily undulated, the lateral basal portion longer, entire, and folded over the column, and having on the disk a crest of four parallel lamellæ which are crenated along the upper edge and become divergent at the apex. *Column* about half as long as the lip, winged at the margins, and having a blunt keel at the back terminating just behind the anther-bed, of a paler yellow colour than the rest of the flower.

Lælia flava, *Lindley, Botanical Register*, 1839, Misc. 143; *Id.*, 1842, t. 62; *Williams, Orchid-Grower's Manual*, 6 *ed.*, 359.

Lælia caulescens, *Lindley, Botanical Register*, 1841, under t. 1.

Bletia flava, *Reichenbach fil.*, in *Walpers' Annales Botanices Systematicæ*, vi., 431.

The genus to which our present subject belongs is a most popular one, and comprises, among its species, many that produce large and showy flowers of extreme beauty. The species we now figure is very distinct, and one which is well worth growing on account of its diversity, both of colour and habit, from the large and popular kinds such as *Lælia purpurata* and *L. elegans*. It is of the same type as *L. cinnabarina*, and of a similar mode of growth, but in it the flowers are of orange-scarlet, while in *L. flava*, as will be seen from our plate, they are yolk-of-egg yellow, and thus form a good contrast with the colours of other orchidaceous flowers. This is especially the case when the plants are well grown, such as we have seen produced by the late Mr. S. Woolley, of Cheshunt, who has exhibited at the London shows fine specimens of this plant, each bearing several spikes of gaily-coloured flowers. Our sketch was taken from a well-grown plant in the collection of Mons. Auguste Van Geert père, of Gand, Belgium, who is a great lover of Orchids, and has some good specimens in his collection.

Lælia flava is a remarkably distinct evergreen species, with ovate bulb-like stems a few inches in height, bearing stout leathery dark green leaves, and from the apex of the bulbs, after they have become matured, an erect flower scape terminating in a cylindraceous raceme of eight or ten flowers. The colour of the blossoms is a clear yellow, the sepals and petals being linear-oblong, obtuse, and the lip oblong, with the side lobes plane folded up over the column, and the front portion crispy, recurved, the disk bearing a crest of four elevated veins divergent at the tips. This rare species blooms during the months of March, April and May, it lasts three weeks in beauty, and is a native of Brazil.

We find this plant succeeds in the Cattleya house, and is best grown in small baskets or pans amongst good fibrous peat and sphagnum moss, and provided with good drainage. The plants must be suspended near the glass, as they require all the light which it is possible to give them, and indeed, very little shade is requisite even in the summer. They begin to grow after the flowering season is over, and this is the proper time for repotting them. The plants strongly object to being disturbed if doing well, but the soil should be renewed when found to be in a decayed condition, indeed, bad or soddened soil should never be allowed to remain about the roots. The plants, moreover, dislike to be cut, though this is sometimes necessary when and where the bulbs are decaying. They do not require too much water at any time, but must be kept moderately moist during the growing season, and, in fact, the bulbs must never be allowed to shrivel, but sufficient water must be supplied to keep them in a plump condition. Insects must be kept under; the white scale will sometimes attack the plants, and, unless promptly destroyed, will be found very detrimental to their growth.

ODONTOGLOSSUM VEXILLARIUM Al

ODONTOGLOSSUM VEXILLARIUM ALBUM.

[Plate 227.]

Native of New Grenada.

Epiphytal. *Pseudobulbs* small, compressed, narrow oblong, furnished at the base with accessory leaves which are distichous and sheathing. *Leaves* narrowly elliptic-lanceolate acute, keeled behind, six to twelve inches long, of a pale greenish colour. *Peduncles* radical, proceeding from the axils of the accessory leaves, slender, bearing several flowers in a terminal raceme. *Flowers* large, three inches deep, and two and a half inches across the lip, white, with just the faintest tinge of rosy-blush towards the lower or basal portion of the sepals; *sepals* oblong-ovate acute, the tips recurved, white with a very delicate rosy tint towards the base, the two lateral ones standing out at right angles; *petals* large, obovate-oblong obtuse, white; *lip* very large, flat, roundish with a deep notch in front, white and veiny, the base marked by a series of short slender radiating lines of pale yellow tinged with rose, spreading downwards from the short claw-like narrowed base, which has a pair of yellowish ovate acute lobes or horns projected upwards one on each side of the column, and bearing a small two-lobed callus at the base of the claw. *Column* small, white, without wings.

Odontoglossum vexillarium album, *Finet MS.; Williams, Orchid Album*, v., in note under plate 204; *Id., Orchid-Grower's Manual*, 6 ed., 638.

We are pleased to be able to figure a white-flowered form of the charming *Odontoglossum vexillarium*. Within the last few years there have been added to our collections several new and attractive varieties—some with brightly coloured blossoms, others with large rose-coloured lips—all producing fine showy flowers; and, besides these, there are many other variations to be found amongst the abundant importations. They are free-growing plants and profuse bloomers, and with their numerous graceful racemes of flowers overhanging the light green foliage they make useful plants for the exhibition table as well as for home decorative purposes. The *O. vexillarium album*, which we now illustrate, will produce a fine effect amongst the high coloured forms. We received the materials for our sketch from the well-grown collection of Mons. A. H. Finet, of Argenteuil, France, in which it has flowered for two or three successive years. It was exhibited at Paris in 1884, when it was awarded a first prize, and, certainly, it well deserved that honour. We have subsequently received from R. H. Measures, Esq., of Streatham, a few flowers of the white variety called *O. vexillarium Measuresianum*, which is essentially different from the one we now figure; this latter received a First-class Certificate from the Royal Horticultural Society in 1885.

Odontoglossum vexillarium album is a free-flowering and distinct variety. It produces white flowers, which have but the faintest tinge of rose colour towards the

lower portion of the sepals. The blossoms are produced during the months of May and June, and last three or four weeks in perfection if they are kept free from damp—for as is the case with all white flowers, they soon become spotted if they are wetted. It is a native of New Grenada.

One of the principal matters to be attended to in the cultivation of *O. vexillarium album* is to keep it free from insects. The plants are subject to be attacked by the thrips, which, if allowed to increase, will soon make sad havoc, disfiguring the foliage, and thus causing them to look unsightly. The same is also the case with *O. Roezlii*, which requires the same treatment. Full instructions respecting the cultural requirements of *O. vexillarium* were given under plate 171, in our fourth volume.

These plants are easily increased by dividing them just as they begin to make new growth, that is, sometime after the flowering season; the proper time may easily be known by the young growths making their appearance. When the plants have attained a large size it is generally a wise plan to divide them, as they are apt to damp off towards the centre of the mass; and, should this occur, it must be seen to at once, or the bulbs will soon rot away and the plant perish, whereas, by taking it in time some portions may be saved if the decayed parts are carefully cut away. In such cases, it is a good plan to wash the roots of the live portions and repot them, or place them for a time in a shady place until they make fresh roots.

Cleanliness in Orchid Culture.—This is undoubtedly a virtue; indeed, it is very important in all plant culture. The houses should be kept sweet and clean, together with the stages and pathways. The plant structures, as well as the plants, should always have a neat, tidy, clean appearance, for this gives satisfaction both to the employer and the gardener. The pots in which the plants are growing should be kept scrupulously clean; it is very annoying to those who value this quality to see good and handsome plants in dirty pots; the begrimed disorderly appearance of the surroundings detracts from the beauty of the flowers. It is to us a great delight to go into a clean plant house. There are persons who do not take the slightest pride in their plant houses, but it is equally as necessary there as in a dwelling house, and it is not only satisfactory, but pleasant, to hear visitors remark how clean and sweet one's Orchid houses are kept. In the case of amateurs, if the plants are untidily kept, no doubt the owner gets dissatisfied with them, and does not take the same degree of interest in them which he otherwise would do.—B. S. W.

ONCIDIUM SESSILE.

ONCIDIUM SESSILE.

[Plate 228.]

Native of Caracas.

Epiphytal. *Pseudobulbs* oblong, compressed, costate, about two inches long, diphyllous. *Leaves* lorate or strap-shaped, bluntish, shorter than the scapes, papery in texture. *Scapes* radical, lateral, stout, erect, about a foot high, supporting distant lateral horizontal branches, on which the blossoms stand erect in two opposite ranks. *Flowers* two inches deep, one and a quarter inch across, yellow spotted with pale reddish brown, attached by greenish pedicels, the sepals and petals quite clawless; *sepals* oblong obtuse, half an inch long, bright yellow, the lower half thickly covered with small dots of a pale reddish brown; *petals* similar in size, form, and colouring, all the parts spreading, plane, equal, and resembling each other; *lip* auricled, the auricles large, rounded, spread out, clear yellow, the front part broad, rounded, retuse, also clear yellow, the sides of the narrowed base in front of the auricles marked by a pale brownish half-moon-shaped blotch; crest hollowed out, three-lobed, bilamellate in front. *Column* white, its wings short and truncated.

Oncidium sessile, *Lindley*, in *Paxton's Flower Garden*, i., *t.* 21; *Id.*, *Folia Orchidacea*, *art.* Oncidium, No. 174; *Reichenbach fil.*, in *Walpers' Annales Botanices Systematicæ*, vi., 803; *Williams, Orchid-Grower's Manual*, 6 ed., 501.

The plant which we are now about to illustrate and describe is a very old species of *Oncidium—O. sessile*; indeed there are but few of the present generation of Orchid growers who are acquainted with the plant. It is, however, our desire to illustrate for the benefit of our readers such of the good old kinds as come before us, as well as the deserving novelties. At one time there were fine specimens of this distinct species in various collections, though now it is but seldom seen, one reason being that there have been no recent importations of the plant, at least, none have come under our notice. Hence it is a rare plant, and, on account of its well-marked characteristics, it is quite worth a place with others of its class in our Orchid houses. Our drawing does not do justice to the fine panicle of flowers either as regards its size or length. The sketch from which our figure was derived, was taken from a handsome plant grown by H. J. Buchan, Esq., Wilton House, Southampton, where there is a fine collection of well-managed orchidaceous plants.

Oncidium sessile is a compact evergreen species, growing about twelve inches in height, and having strap-shaped leaves of a light green colour. The flower scape bears a panicle of large pale yellow flowers, spotted in the centre with pale cinnamon colour; these flowers are one-and-a-half inch in diameter, and nearly two inches deep, and are produced during the spring months, lasting for several weeks in perfection.

This *Oncidium* requires the heat of the Cattleya house, and we find it succeeds in well-drained pots of rough fibrous peat and sphagnum moss. The plants must be well elevated above the pot, as they like to send their roots over the surface, where they will be found working amongst the material used for potting. They require to be watered sparingly even during the growing season, and to be shaded from the sun when its rays are powerful, although they like plenty of light for ripening up their pseudobulbs, which latter is a chief inducement towards the free production of their blossoms. This is the way in which Mr. Buchan's gardener, Mr. Osborne, treats this plant with remarkably good results.

Failures in Orchid Culture.—Many persons get disheartened through failures in their attempts to grow Orchids, and give up their cultivation in despair. The failures are sometimes, but not often, caused through the neglect of the plants by those to whom they are entrusted, and the owners remain ignorant of the cause until the failure is completed, and then give up in despair. Some of the causes of disaster are very simple, such as imperfect drains in a house, the noxious gases arising from which are most injurious to plants, causing the foliage to go bad, and the blossoms, if any, to become poor. We knew a gentleman who dismissed several gardeners, thinking they could not grow Orchids and other plants; but at last he found out that the sole cause of failure was that the stables were close to the Orchid house, and that the effluvia from the horses penetrated through the wall into the house. This went on for some time until the discovery was made, and then the walls were cemented, after which, to the proprietor's astonishment, the plants began to grow freely, and he now hopes to succeed since the evil is remedied. We have also heard of failures through putting the boiler under the house; all may go well for a time, but in a little while the smoke and sulphurous fumes will begin to penetrate through the brickwork, and destroy the plants. This may soon be remedied by taking out the boiler, and fixing it in a separate place outside the house. Some persons think that by having them under the houses room is saved, and the heat is economised, but it is a great risk to run, and, even if it does answer, very little room is gained. We advise all growers to guard against such calamities by ascertaining, before building their houses, if there are any drains running through the spot likely to give off effluvia injurious to the plants We once knew of a case where many plants were spoiled through a drain being broken into, and it was not discovered until too late to stay the evil. The only practicable remedies were to alter the drains, or remove the house into another part of the garden; the former was done, and the plants soon made rapid progress, and the proprietor was induced to go on purchasing more, until he made a fine collection. There is no doubt many an Orchid grower has given up in disgust through these and other failures, instead of—as we have often recommended—calling in some one of experience to try to ascertain the reason of the damage, for two heads are generally better than one. If the cause of the mischief cannot be found out at the first consultation, try another expert, and persevere until it is discovered.—B. S. W.

J.Nugent Fitch.del et lith.

PHALAENOPSIS LASTA

PHALÆNOPSIS CASTA.

[Plate 229.]

Native of the Philippine Islands: a supposed natural hybrid.

Epiphytal. *Stem* short, stout, producing roundish somewhat flattened roots, which are rarely asperous. *Leaves* few, thick, fleshy, distichously-spreading, alternately stem-clasping, oblong obtuse, emarginate, in the young state lightly mottled as in *P. Schilleriana* but in age becoming deep green and spotless, tinted beneath with purplish wine-colour, which is slightly indicated along the upper edge. *Scape* basilar or axillary, pale purplish green supporting a drooping raceme of several large showy flowers. *Flowers* white, spotted with crimson on the lip, the base of the dorsal sepal and petals faintly tinged with rosy purple; *sepals* oblong obtuse, the dorsal one an inch and a half long, the more obtuse apiculate lateral ones, which are directed downwards somewhat shorter, and spotted at the base; *petals* roundish with a narrowed or cuneate base, somewhat concave, an inch and three-fourths in breadth and about the same in length; *lip* about an inch across and an inch deep, blotched with crimson towards the centre, three-lobed, having a pair of roundish-oblong cuneate basal lobes which are tinted with yellow at the lower edge, above that marked with three or four small oblong transverse crimson bars, and having also a triangular-hastate front lobe which is furnished on each side at the apex with a short reflexed tendril, and is spotted down the central line, and also along the hinder margin with deep red, otherwise white. The callus is the same as in *P. amabilis (Aphrodite)*. *Column* short, white, decurved.

Phalænopsis casta, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., iii., 590; *Williams, Orchid-Growers' Manual*, 6 ed., 528.

The genus we now illustrate is becoming much more abundant in specific forms than it was a few years ago; and our collectors are still diligently searching for the beautiful species that abound in their native habitats, where the flowers get hybridised by the insects. This accounts for our receiving so many fresh forms, in which, although some are very slightly different in their colour and spotting, there is yet a variation which is worth noticing. We may indeed remark that there are not many kinds to surpass the three large-flowered species which were first introduced, namely, *Phalænopsis amabilis*, *P. grandiflora*, and *P. Schilleriana*, the last-named being quite distinct in the colour both of its flowers and foliage. All these produce grand spikes of blossom when well grown. It gives us great pleasure to see other meritorious species of the same class introduced. They form a grand feature in our Orchid houses as their flowers are of long duration, lasting with care for some weeks in a presentable condition. There are no Orchids that produce such graceful spikes as these, nor such a number of flowers, with so small an amount of foliage; and when well-grown the leaves and plants are in themselves objects of beauty.

The figure we now publish was taken from a well-grown plant in the collection of F. A. Philbrick, Esq., Q.C., Oldfield, Bickley, who grows and flowers the species of *Phalænopsis* to a great degree of perfection, and has moreover been very successful in their cultivation for many years.

Phalænopsis casta is a compact evergreen plant supposed to be a natural mule, of which *P. Schilleriana* is one parent, the flowers being those of *P. amabilis (Aphrodite).* The leaves are slightly spotted in their young state, but the spots disappear as they attain maturity. The flowers are white like those of *P. amabilis,* the bases of the upper sepals and petals being slightly tinged with purple, and those of the lateral sepals spotted: the column resembles that of *P. amabilis.* It blooms during the autumn and winter months, and continues for a long time in flower

There are many failures in the attempts made to cultivate the species of *Phalænopsis;* but we know of no Orchids that afford such great pleasure when well-grown, as one sees them at Oldfield, where they are under the care of Mr. Heims, Mr. Philbrick's gardener, who has for many years, and in two quite different localities, given them the same treatment with equal success. It is disheartening to see these plants dwindling away as they do in some collections, after they have been flourishing for some time—growing, indeed, equally as well as Mr. Philbrick's, but from some cause or other, often not ascertained, failing even after success has been achieved. We have written copiously on the cultivation of the *Phalænopsis* in the *Orchid-Growers' Manual* (6th edition, page 528), where full particulars are given, which would occupy more space here than we have at our command.

Dendrobium Dalhousieanum Rossianum.—H. J. Ross, Esq., of Castagnola, Lastra a Signa (Italy), has sent us a most wonderful inflorescence of *Dendrobium Dalhousieanum* var. *Rossianum.* The raceme measures eighteen inches in length, and bears fifteen large blossoms, each five inches in diameter. The sepals and petals are of a richer colour than in the old or typical form of the species, and are broader in all their parts, while the lip has large blotches of purple-crimson on the upper part, and the lower portion is of a rich lemon colour. The inflorescence must present a grand appearance when on the plant, since the spikes hang so gracefully from the top of the stems, which, moreover, themselves always have a pleasing effect on account of the crimson markings which occur throughout their whole length, and their dark green foliage. This variety was named by Prof. Reichenbach in honour of Mr. Ross, who may well be proud of having such a fine Orchid dedicated to him.—B. S. W.

EUCHARIS PANAMA

LYCASTE PLANA.

[Plate 230.]

Native of Peru.

Epiphytal. *Pseudobulbs* oblong obtuse, slightly ribbed or angular, about three inches long, dark green. *Leaves* broadly oblong-lanceolate, strongly nervose, one and a half foot long, produced two or three together from the apex of the pseudobulb. *Scapes* radical, one-flowered, green, furnished with distinct brown lanceolate bracts sheathing at the base, the upper one ventricose and cucullate, larger than the ovary. *Flowers* about three and a half inches across when the lateral sepals are expanded, and having the lip handsomely coloured; *sepals* oblong acute, two inches long, spreading, the base connate into a short conical horn, the tips recurved, reddish-brown in the lower half, the upper half green; *petals* similar in form but shorter, projected forwards but recurved so that the tips become spreading, white slightly tinged with green; *lip* three-lobed, the lateral lobes crenulate at the apex and there stained with pale crimson, the middle lobe roundish ovate serrated, of a rich crimson; *callus* elevated, obtuse, obsoletely three-lobed. *Column* pubescent, white.

Lycaste plana, *Lindley, Botanical Register*, 1842, misc. 96; *Id.* 1843, t. 35, et misc. page 15; *Williams, Orchid-Growers' Manual*, 6 ed., 380.

The species of *Lycaste* form a most useful group of Orchids, and they are moreover of an ornamental character, for there are amongst them many forms and colours that help to make our Orchid houses gay during the autumn and winter seasons. They can be grown in cool houses, they are free blooming, and they are of easy cultivation. The species that we now submit to the notice of our subscribers is a very distinct one, and is quite worthy of a place in every collection. We are indebted for the opportunity of figuring it, to R. H. Measures, Esq., Woodlands, Streatham, in whose rich collection our artist took his drawing.

Lycaste plana is an evergreen species with large ovate oblong ribbed pseudobulbs, bold, oval, lanceolate, plicate leaves, and flowers some three and a half inches across, having flat oblong spreading sepals, which in the form originally figured by Dr. Lindley, were of a fine madder-red colour, the smaller white petals with a rosy crimson blotch having in it an eye-like spot of white on their recurved tips, and the still smaller white lip being spotted with rosy crimson. In the form here illustrated the sepals are partly green, and the lip is of a rich crimson. It flowers during the winter, and lasts several weeks in bloom.

The Lycastes are of easy culture, and will thrive exceedingly well in pots with good drainage, if provided with some good fibrous peat and a little leaf mould mixed with it. The plants should be well elevated above the pot rim, as they are free

rooting, and require a good supply of moisture during the growing season, which commences when their flowering is over. We find this an excellent time for repotting them should they require it; if not, a little fresh material placed about their new roots will benefit them. These plants require shading from the hottest sun, or their foliage will soon be affected, which will not only interfere with their progress but greatly injure their appearance. They will grow well in the Odontoglossum house at the warmest end; indeed, more warmth than they can obtain there would not harm them. They must be kept free from insects. They are propagated by dividing the plants just as they begin to grow, potting the divided pieces in the same material as that described above, and not giving much water until they begin to push forth their growth and make roots.

Construction of Orchid Houses.—One of the most important items in Orchid culture is that of the construction of the houses for the reception of the plants. Sometimes these structures are joined together or placed side by side with a gutter running up the central space between them. Such houses are difficult to get at, and glass is frequently broken through the difficulty in passing along the gutters to repair or paint the sashes. But even this, though inconvenient and expensive, we do not consider the chief evil of such a mode of construction. We maintain that there should be a passage-way of three feet or more in width between the houses, so that a free circulation of air may be obtained; and then, if they are span-roofed, ventilators can be placed in the brickwork in order to secure bottom ventilation, which is required equally with that at the top to keep the plants in perfect health. We have always adopted this plan, and have found it most convenient and useful for regulating the temperature of the house. It is sometimes argued that in building two walls we incur an extra expense, but we think the first expense is the best, and we know that it is soon saved by the facility of access to each house separately, by avoiding the expense of the gutters and the inconvenience of getting at the glass for repairs. The tradesmen's bills will show which is the best and cheapest plan in the end. Those gentlemen who go to the expense of having houses built, of purchasing plants, and of keeping men to look after them, should not object to lay out a little extra money on the structures for the well-being of the plants, and as they gain experience they will be able to see the difference in the progress of their plants. Those who may think it worth while to act according to these few simple suggestions will find their reward. It is always desirable to try to avoid whatever is detrimental to the growth of the plants, whether they are valuable ones or not, for complete success not only gives one greater pleasure but is far more satisfactory both to employer and employed.—B. S. W.

CATTLEYA HARDYANA.

[Plate 231.]

Native of New Grenada: a supposed natural hybrid.

Epiphytal. *Stems* short, clavate-fusiform falcate, each bearing a solitary leaf, as in *C. gigas*. *Leaves* ligulate-oblong obtuse, emarginate, with a central furrow, eight to ten inches long, and upwards of two inches broad. *Peduncles* about four-flowered. *Flowers* very large, measuring as much as eight inches across, strongly scented and superbly coloured; *sepals* lanceolate recurved, four inches or more in length and fully an inch broad, striate, of a rich rosy mauve, white at the extreme base; *petals* ovate, undulated at the margin, nearly three inches across, marked with a distinct and conspicuous wedge-shaped spot of white at the base, otherwise of a deeper rosy hue than the sepals, somewhat uneven on the surface whence the colour appears to be shaded or mottled; *lip* extremely beautiful, about three inches across, with a squarish outline in front, the basal part folded over the column, the apex deeply bilobed, and the margins excessively undulated so as to have the appearance of being deeply lobate; the whole of the front lobe, the margin of its upper portion, and the part which encloses the column are all of the richest and deepest crimson-magenta, and this is continued backwards as a ground colour as far as the mouth of the tubular portion, but is decorated with a network of closely reticulated golden veins, while towards the upper angle on each side the crimson ground colour dies out, leaving a broad patch of clear bright yellow. *Column* included.

Cattleya Hardyana, *Hardy MS.*; *Williams, Orchid-Growers' Manual*, 6 ed., 633; *Gardeners' Chronicle*, N.S., xxiv., 206.

The *Cattleya* we now figure is assuredly one of the most magnificent of the many species or varieties or hybrids that have come under our notice, notwithstanding that of late years many very beautiful and greatly varied kinds have been introduced. The appearance of these fine new Cattleyas is always a source of great pleasure and the signal for much excitement among Orchid growers, for there is really nothing to surpass them in their colours, the size of their flowers, and their showy appearance generally. A few years ago we were satisfied with our Orchid houses looking gay for part of the year, but now there are so many species and varieties in cultivation that such structures can be kept gay all the year round with these plants alone. Through the kindness of G. Hardy, Esq., of Pickering Lodge, Timperley, we received for illustration flowers of this exceptionally fine species, and we believe that in his well-known collection it is quite unique.

In its manner of growth *Cattleya Hardyana* resembles *C. gigas*, the plant being, we think, undoubtedly a natural hybrid between *C. gigas* and *C. Dowiana aurea*,

which grow together, and this novelty was found in a batch of these plants which were imported at the same time. The individual flowers measure eight inches across; the sepals and petals are of a deep rosy purple; the lip is three inches across, its anterior portion much frilled and of a pure magenta colour, the throat and upper portion rich yellow handsomely veined with deep purple, as in *C. Dowiana*. The lip has the two eyes that are peculiar to *C. gigas*, and in this case they are of a rich yellow margined with magenta. The flowers are strongly scented. It blooms in August, and is a native of New Grenada.

This Cattleya requires the same treatment as *C. gigas* and the *C. Dowiana* section, of which we have given full particulars in our second volume, Plate 84. By securing to them this simple treatment they will grow and flower freely, bringing forth an array of their gorgeous blossoms in due season.

Orchids from Seed in Tropical Countries.—The more closely we observe the wise provisions of nature the more shall we be convinced that our favourite Orchids will continue to flourish and yield a supply for the thousands of growers in the different parts of the Globe, not only in Europe but also in countries where the climate is suited to the growth of the plants without artificial heat. No doubt we shall in time have them increasing freely from seed, as in their native habitats. Moreover, great results may be looked for in tropical countries by hybridising the different species, and sowing the seeds in places where they may thrive without the aid of man. It takes some years to get seedlings into flowering plants, but the time will be repaid if a careful selection of parents is made, for after the seeds are ripe they will sow themselves, and be carried by the wind into various congenial places. The insects will also do their work by carrying the pollen to the flowers of other species, after which they will develop fruit and ripen their seeds. When seeds scatter themselves about naturally, we cannot but think that good results must follow. It would be a most interesting pursuit for those who have estates in tropical countries to import Orchids from different parts of the world, for they would thus be enabled to encourage their growth and in time might turn them to good account, especially if new species and varieties were forthcoming.—B. S.W.

CYPRIPEDIUM INSIGNE ALBO-MARGINATUM

CYPRIPEDIUM INSIGNE ALBO-MARGINATUM.

[Plate 232.]

Native of India.

Epiphytal. *Acaulescent*, the plant forming a close tuft of leaves produced directly from the crown. *Leaves* distichous, overlapping at the base, linear-ligulate acute, of a deep green colour, paler beneath. *Scapes* purplish, springing up from amongst the leaves. *Flowers* large and showy, very distinct from the type on account of a decided yellow tinge in their colour; *sepals* (dorsal) roundish-obovate, fornicate, two and a half inches long and two inches broad, boldly undulated, the lower two-thirds marked with an obovate blotch of greenish yellow traversed by light brown veins and decorated with scattered spots of a pale reddish brown, those near the central rib being the largest; the upper third a pure white forming a broad margin to the spotted portion, and this margin is continued nearly to the base, but becoming narrower downwards; *lateral sepals* smaller, united into an ovate-oblong organ, pale washy yellowish green marked with green veins and having the edges recurved; *petals* linear-oblong obtuse, two and a half inches long, slightly undulated, having a tuft of blackish hairs at the base, tawny-yellow marked with numerous fine parallel reddish brown veins over the surface, but most prominent along the centre, these veins being connected by short transverse veinlets; *lip* saccate, ovate with the posterior lobes lengthened out, the outer surface of a palish red-brown, the inner surface yellow dotted with brown. *Staminode* roundish-obovate, emarginate behind, apiculate in front, pubescent, deep yellow, with an orange coloured boss in the centre.

Cypripedium insigne albo-marginatum, *Hort.; Williams, Orchid-Growers' Manual*, 6 ed., 248.

In a former plate we have given an illustration of the true *Cypripedium insigne*. We now figure a distinct variety of that species which we consider to be quite worth the trouble of cultivating. The plants require so little care, and can be grown in any warm glass frame or greenhouse, that, in fact, they become everybody's plants, and even those who have but little convenience for accommodating Orchids generally, can find a place for these. There are several other forms of *C. insigne* that thrive under similar treatment. They are all free-flowering plants, and last in perfection for seven weeks or more, at a time which makes them especially useful, viz., in winter. They may be taken into a warm room when in blossom. Many large specimens of *C. insigne* are grown in this way, and used for the decoration of halls and other places where there is plenty of light. They must be kept rather moist at the roots, and if set in the different parts of the house will do much to keep it gay for some time. When the flowering is over they should be returned to the place in which they were cultivated, in order to encourage them to make fresh growths and good foliage. Our

drawing was taken three years ago from a fine specimen in the well-known collection of W. Leach, Esq., Fallowfield, Manchester. Since that time these Orchids, which were under the care of Mr. Swan, have been distributed.

Cypripedium insigne albo-marginatum is an evergreen plant resembling *C. insigne* in its foliage and manner of growth. This, however, is a peculiar and desirable variety, there being a distinct yellowish cast in its flowers, and the dorsal sepal is broadly margined with white, this portion being quite devoid of the spotting usually found in the type. It produces its flowers during the autumn and winter months, and continues in bloom for seven weeks.

This variety requires the same treatment as the type *C. insigne*, which will be found to suit it admirably. The treatment referred to was explained in our fourth volume, Plate 155, under which full directions for culture are given.

CATTLEYA SPECIOSISSIMA.—We have to acknowledge having received from A. Heine, Esq., Fallowfield, Manchester, one of the most beautiful flowers of *Cattleya speciosissima* we have seen; it is, in fact, the finest that has come under our notice, the individual flowers measuring more than eight inches in diameter, each petal being three inches across, of a pale rose colour, wavy at the edge; the sepals of the same colour; the lip pale rosy purple bordered with pale rose. It had altogether a very attractive appearance.—B. S. W.

ODONTOGLOSSUM RUCKERIANUM.—We have just received a remarkably fine spike of this *Odontoglossum* from Mr. J. Routledge, gardener to C. L. Wood, Esq., Freeland House, Bridge of Earn, Perth. It bears thirty flowers of good size, and it is also a fine variety, the flowers differing slightly from the original type, as described in the *Orchid-Growers' Manual* (6 ed.). With this we received a photograph of the plant in its flowering state, which shows that it has well-grown pseudobulbs and fine foliage. It was imported with a batch of *O. crispum*, and is still a rare plant. We have no doubt that it is a natural hybrid, and that there are several of these hybrid forms of different colours growing in the same locality.—B. S. W.

COMPARETTIA SPECIOSA

COMPARETTIA SPECIOSA.

[Plate 233.]

Native of Ecuador.

Epiphytal. *Pseudobulbs* small, truncate, cylindrical or oblong, purplish, invested with pale-coloured ovate-lanceolate acuminate scales. *Leaves* ligulate-oblong acute, tapered to the base, sessile, persistent, channelled, the base partially enveloped by the pale-coloured membranaceous bracts of the pseudobulb. *Scape* proceeding from the inner base of the leaf, purplish, furnished with sheathing bracts at intervals, terminating in an open many-flowered raceme. *Flowers* large for the genus (one and a half inch broad), and of a strikingly brilliant colour; *sepals* (dorsal) erect, ovate-acuminate, reflexed at the apex, bright orange streaked with deep red, the lateral ones oblong-acute, connate into a boat-like form, bearing one or two teeth at the acuminated apex, continued behind into a slender minutely pilose *spur*, which is upwards of an inch and a half long, green at the base and yellowish towards the tip; *petals* ovate acute, orange striped with deep red similar to the dorsal sepal, and standing erect beside it; *lip* with a very short claw, auricled on both sides at the base and bearing a small keel between the auricles, the anterior lobe large, subquadrate, deeply emarginate in front, and of a brilliant cinnabar or orange-red colour. *Column* small, with green wings and a white beak.

Comparettia speciosa, *Reichenbach fil.* in *Gardeners' Chronicle* n.s., x., 524; *Williams, Orchid-Grower's Manual,* 6 ed., 226.

The *Comparettias* form a small genus of very beautiful Orchids of the epiphytal class. The species we here figure and describe is a most charming one, and worthy the attention of all growers of these plants, since the brilliant colour of its flowers is most attractive, as may be seen by a reference to the accompanying illustration, for the opportunity of preparing which, we are indebted to Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, who exhibited the plant at one of the Tuesday meetings of the Royal Horticultural Society, when it was awarded a well-deserved First Class Certificate.

Comparettia speciosa is one of the dwarf-growing species of the evergreen class, having very small oblong pseudobulbs, ligulate-oblong leaves, and loose drooping racemes of numerous large flowers, which are not less remarkable for their broad lip and long spurs than for their brilliant colour. The sepals and petals are light orange with a cinnabar glow; and the short-clawed lip has the front lobe sub-quadrate and emarginate, about one and a quarter inch wide, with a small keel between the basal auricles, the colour being of the finest cinnabar-orange throughout. The plant will hold on for several weeks in bloom.

There is no doubt that the *Comparettias* require great care to keep them in perfect health, indeed, nearly all this class of Orchids require special attention. We have found the Cattleya house the most suitable place to grow them in. They should have a position where they can get plenty of light, and hence should be suspended from the roof near the glass, but though a little sun will not harm them, they must also be shaded from the burning sun during summer. Baskets or pans will be the best receptacles in which to cultivate them; and the potting material we use is sphagnum moss and fibrous peat, with good drainage, taking care not to place too much of this material about the roots. A few lumps of charcoal, mixed with the moss and peat, will attract the roots to adhere to them, and thus cause them to grow more freely. The materials used about the roots must always be kept fresh and sweet, as they dislike stagnant soil about them, and in fact will not endure it. They will also thrive on blocks with live sphagnum moss. They require to be kept moist during their growing period, and even in their resting season they should not be allowed to get dry, for if they commence to shrivel they will soon pine away, having no thick fleshy bulbs to draw upon for their support.

These plants do not like to be disturbed or cut about. They require all the care that can be bestowed upon them, and when a place has been found which suits them it is wise to let them remain in it. If they will not thrive in one part of the house try them in another, but never give up in despair. If one plant fails, try another healthy plant in a different aspect of the house, for they will frequently succeed in one part and fail in another; if that particular house should not suit them remove them to one of a different aspect and temperature. It is most astonishing to see how various plants will thrive under a different treatment and in different positions as to light. There is much yet to be learned by an intelligent study of these points.

VRIESEA BARTERI ALBA

LYCASTE SKINNERI ALBA.

[Plate 234.]

Native of Guatemala.

Epiphytal. *Pseudobulbs* oblong-ovate, two to three inches long, compressed, furrowed. *Leaves* persistent, oblong-lanceolate acuminate, membranaceo-herbaceous, nervose, dark green. *Scapes* radical, usually one-flowered, about eight inches long, stoutish, green, invested with a few lance-shaped sheathing bracts. *Flowers* large, several produced from the base of each pseudobulb, fleshy in texture, white with a tinge of pale yellow on the lip, issuing from a green bract-like spathe; *sepals* spreading, the dorsal ovate-oblong bluntish, the lateral ones longer and more decidedly oblong acute at the apex, white just tinted with sulphur-yellow near the base; *petals* much smaller, convolute over the column, oblong, the tips recurved, bluntly acute, pure white; *lip* still smaller, concave, white, three-lobed, with the middle lobe roundish ovate deflexed, the two erect oblong lateral lobes and the tongue-shaped appendage or callosity on the disk of the lip all pale yellow. *Column* semiterete, pubescent in front.

Lycaste Skinneri alba, *of gardens; Williams, Orchid-Grower's Manual*, 6 ed., 381; *Floral Magazine*, 2 series, t. 35, fig. 1; *Pescatorea* t. 39, right hand figure (a smaller form).

There can be no question that the varieties of *Lycaste Skinneri* are amongst the most useful of decorative Orchids, for we find so many shades of colour among them, they are so free blooming and of such easy culture, and they possess also such enduring qualities. For ornamental purposes during the dreary months of autumn and winter there is nothing to surpass, and few subjects to equal them. When Mr. Skinner imported these plants, by thousands, we do not remember seeing any white-flowered forms, but since then a few white-flowered varieties have been introduced, but these, which are a great acquisition, are rare, as, indeed, seems to be the case with most Orchids, of which white forms have made their appearance among the more highly-coloured sorts. There are, indeed, comparatively few white forms amongst the many cultivated Orchids, which is to be regretted, as they are so much in favour with nearly all who grow these plants, in consequence of their forming such good contrasts when mixed among the darker flowers. Of the *Lycastes* there are, it is true, other light coloured forms, which all help to produce a pleasing effect when judiciously arranged, and set off by their broad green foliage. Our drawing was taken from a fine plant in the well-grown collection of J. Buchanan, Esq., Oswald Road, Morningside, Edinburgh.

Lycaste Skinneri alba is an epiphyte, evergreen from the persistance of its foliage, having short thick pseudobulbs, and ribbed or plicate leaves of a dark green

colour. The flowers are produced from the base of the pseudobulbs, on scapes about eight inches long, several flowers proceeding from each bulb. They last for a considerable time in beauty. The sepals and petals are of a pure white, the lip is also white with the faintest tinge of yellow about the centre, and the tongue-shaped appendage is wholly yellow. It is one of the most chaste and beautiful of all the Lycastes, and was well bloomed by Mr. Grossart, Mr. Buchanan's gardener.

This plant requires the same treatment as *L. Skinneri*, that is, to be planted in rough fibrous peat, with good drainage, raising the plant well above the pot so that its roots may work themselves down among the peat, for they are free-growing and free-rooting subjects. They require a good amount of water during the growing season, and even when at rest they need to be kept a little moist, as they begin to show their flowers as soon as they have completed their growth. When the flower buds are three inches high more water should be given to encourage the development of the blossoms. They are plants requiring somewhat cool treatment, and will succeed well at the cool end of the Cattleya house or the warm end of the Odontoglossum house. They begin to grow after their flowering season is over, and that is a good time to repot them should they require it. The plants should be shaded, for if the full sun be allowed to shine on them during the hottest part of the day it will injure the foliage, and cause it to turn yellow, which is most injurious to the plants. They require, however, all the light which it is possible to obtain for them to induce vigour in their growth and a full bold development of their flowers.

These plants are propagated by dividing them just as they are starting to grow, leaving one or two old bulbs at the back of the leading breaks, the divisions being potted in the same material as that before recommended for the older specimens. The plants must be kept free from insects. The white and brown scale will sometimes attack them, and if allowed to increase will quickly disfigure them and injure their growth; they may, however, be easily cleaned off with a sponge, the plants having such broad foliage.

LÆLIA CALLISTOGLOSSA.

LÆLIA CALLISTOGLOSSA.

[Plate 235.]

Garden Hybrid.

Epiphytal. *Stems* fusiform, furrowed, monophyllous. *Leaves* oblong obtuse, emarginate, nine inches or more in length, and upwards of two inches in breadth, of a deep green colour. *Scape* about two-flowered, issuing from a green oblong spathe produced at the base of the leaf. *Flowers* in outline resembling those of *Lælia purpurata*, large and beautifully coloured, the lip being of an especially deep rich tint of magenta; *sepals* oblanceolate acute, narrowed to the base, the margin somewhat revolute, and the tips recurved, the colour a lively tint of rose paler towards the base; *petals* ovate-lanceolate acute, strongly revolute at the edge and twisted rather than wavy; *lip* obovate in general outline, two inches across the undulated anterior lobe expanded into a broad subquadrate emarginate limb, the bluntly angular basal part folded over the column and of a deep magenta-purple with paler streaks, in the throat orange-yellow with crimson-purple radiating veins, the colouring of the front lobe continued backwards so as to meet over the column, the margin being prettily frilled, and the whole surface of an intensely rich deep magenta-purple. *Column* included, slender, whitish tinted with purple.

Lælia callistoglossa, *Reichenbach fil*, in *Gardeners' Chronicle* n.s., xvii., 76; *Williams, Orchid-Grower's Manual* 6 ed. 636.

The new *Lælia callistoglossa* which displays such attractive and brilliant colours is one of the most beautiful of the Hybrid Lælias that have yet been bloomed. This happy result has been brought about by the judicious selection of two good parents, both of them being fine first-class species, namely, *Lælia purpurata* and *Cattleya gigas*. The cross was effected in the nursery of Messrs. Veitch and Sons, of Chelsea, and we heartily congratulate them on the production of this and many other cross-bred plants, their perseverance in the good work of hybridisation being thus rewarded by the origination of sterling novelties. It takes a long time for seedlings to mature their growth and to bring forth flowers, and they require, especially in their early stages, much patient care, such, as it is well known, Mr. Seden has bestowed upon them. *L. callistoglossa* is one of his pet productions. Through the kindness of Baron Schröder, of the Dell, Staines, in whose fine collection it flowered in great perfection, we were permitted to secure a drawing of it. It was exhibited by Mr. Ballantine, gardener at the Dell, at one of the meetings of the Royal Horticultural Society at South Kensington, and received a well-merited First Class Certificate. The plant is necessarily as yet very rare.

Lælia callistoglossa is an epiphyte of evergreen habit, with erect furrowed stems and dark green foliage, and produces its fine spikes of flowers about March. In

their general form and outline the blossoms resemble those of *L. purpurata*; the sepals and petals are of a bright rose colour, and the lip, which is two inches across, is of a rich magenta-crimson, shaded with mauve, the throat being orange veined with brownish purple. It is altogether a charming production.

There can be no doubt that this plant will require the same treatment as the two parents, that is to say, it must have good rough fibrous peat and the usual ample drainage; it must also be suspended from the roof or as near the light as possible, for a great deal of the success to be realised depends on giving the plants the best place to be found in the house, which is sometimes a rather difficult problem to decide, especially for young beginners, who need to exercise much close observation in order to find out the best aspects for the various classes of plants requiring slight diversity of treatment, which have to be accommodated in the houses at their command.

Orchid Homes.—There is much to be studied regarding the different countries in which Orchids are found. The climate and the localities are in many cases totally dissimilar. These differences influence plant growth in the Tropics in a remarkable manner. Some of the epiphytal types grow in excessively high temperatures—generally in the jungles where few people dare venture; around the coasts it is also very hot, but yet the benefit of the breeze is obtained, and the plants are more comeatable than those in close places. On the mountain ranges the temperature is lower, and plants coming from these cooler regions require less heat in their artificial abode. It is not because a plant comes from the East Indies—for example—that it requires an excessive degree of heat, but the house must be allowed to have a degree corresponding to the temperature of its native habitat and the position in which it is found. Some Orchids are found at from 6,000 to 12,000 feet above the level of the sea, where there is not only a change in the temperature, but the surroundings are so different, that one would think himself in another country after leaving the sultry heat of the low-lying districts where, however, Orchids grow in greater numbers, and are intermixed with many tropical forms of vegetation, such as Palms, Ferns, and other Stove Plants.—B. S. W.

SACCOLABIUM VIOLACEUM HARRISONIANUM

SACCOLABIUM VIOLACEUM HARRISONIANUM.

[Plate 236.]

Native of Pulo Copang.

Epiphytal. *Stem* short, stout, erect. *Leaves* distichously arranged, broadly oblong, keeled beneath, deeply emarginate, so as to become unequally bilobed at the apex, striated, of a dark green colour. *Scape* axillary produced from the axil of the matured leaves, and bearing a dense drooping plume-like raceme, which is sometimes as much as two feet long. *Flowers* about an inch across, crowded, white with a green column, remarkably sweet-scented; *sepals* obovate apiculate, the dorsal one arching incurved, the lateral ones curving downward sideways; *petals* smaller, spreading, obovate or subspathulate, apiculate; *lip* obovate-panduriform, broader than the petals, with an obconial obtuse spur behind, and a blunt thick apiculus at the tip, white, as is the rest of the flower, the disk bearing a solitary elevated line. *Column* green, forming a distinct eye to the otherwise colourless blossoms.

Saccolabium violaceum Harrisonianum, *Williams, Orchid-Grower's Manual*, 6 ed., 568.

Saccolabium Harrisonianum, *Low; Hooker, Botanical Magazine*, t. 5433; *Flore des Serres*, t. 2412.

There are but few white-flowered Saccolabiums known. That which we are now about to bring under notice, *Saccolabium violaceum Harrisonianum* is one of a most beautiful and distinct character. The specimen from which our illustration was derived was certainly a wonderful plant, bearing eight flower spikes of large size and great length, as may be seen from our figure. We have never before met with such a massive specimen as this, which was imported by the Messrs. Sander & Co., of St. Albans, and sold to W. Lee, Esq., of Downside. We expect such noble specimens are rare, even in their native country, for we have become accustomed to see plants with one or two spikes of blossoms (as has also been the case with *Saccolabium violaceum*), there being very few really good massive plants brought over, which is to be regretted, for it is a most beautiful winter-flowering Orchid. The *Saccolabium giganteum* of Lindley, which has been figured in our second volume, plate 56, is much in the way of *S. violaceum*. Of *S. giganteum* we have had large specimens, three feet in height, bearing from twenty to thirty flower spikes, which come into bloom at the same time as those of *S. violaceum*.

The specimen from which our drawing was taken was grown in the well-known collection of W. Lee, Esq., Downside, Leatherhead, where the plant was flourishing in a basket suspended from the roof, in which position it produced a grand effect,

its graceful spikes of delicate white flowers hanging among the dark green foliage, being shown off to advantage in this position.

Saccolabium violaceum Harrisonianum is a compact-growing evergreen plant, with stout dark green leaves, borne on the erect stems in distichous rows; these leaves are broadly oblong, and keeled beneath. The flowers are produced in dense axillary racemes, which are sometimes as much as two feet in length, and bear large pure white blossoms that are sweet scented, and are produced in winter, which makes it all the more valuable, flowers being especially appreciated at that dull season. The individual blossoms last several weeks in perfection if kept free from damp, which is always injurious to white flowers. The specimen to which we have been referring was flowered by Mr. Woolford, the gardener at Downside, in a basket suspended from the roof of the East India house, where it seemed quite at home, being in robust health. It was grown in sphagnum moss with good drainage. The plants must always be kept plump, as, if allowed to get dry and to shrivel, they are very difficult to get back into a plump and healthy state; moreover, through getting dry they frequently lose their bottom leaves, which is a great disfigurement. As they are slow growing plants, it takes a long time to work up a good specimen plant of the species of this group of *Saccolabium*.

Habitats of Cool Orchids.—There are many Orchids found at high elevations, from 10,000 to 12,000 feet above the level of the sea. Odontoglots are found at from 6,000 to 8,000 feet above the sea level. Cool Orchids are found in innumerable quantities in these mountainous regions, where the temperature ranges very low, sometimes only just above freezing point, but it does not injure them. It would not, however, be safe for us to imitate this temperature. We must keep on the right side, and not let the temperature go below 40°, indeed, 45° should be the lowest at night, while in the daytime it may rise higher during the winter. We have given full particulars of the various temperatures in the *Orchid-Grower's Manual*, also of the different houses adapted for the various classes of plants.—B. S. W.

PHALÆNOPSIS STUARTIANA.

[Plate 237.]

Native of the Philippine Islands.

Epiphytal. *Stem* short, stout, producing flattened roots. *Leaves* few, persistent, very stout, fleshy, distichously-spreading, overlapping at the base, elliptic-oblong with a blunt point, the tip recurved so that they appear to be emarginate, the younger ones mottled with grey-green on a deep green ground, becoming when old entirely of a deep unspotted green on the upper surface, and of a purplish-red beneath. *Scape* axillary or radical, slender, elongate, supporting a many-flowered drooping panicle, the branches of which are divaricate. *Flowers* spreading about two inches across and the same in depth, white, beautifully spotted in the lower half; *sepals* (dorsal) oblong-obtuse, an inch long, white with a few faint rosy dots at the base, the lateral ones ovate-acute with the upper base more produced, the front or inner surface above the median line white faintly dotted with pale rose spots, below the central line pale yellow more heavily and closely marked by larger and more angular purple-crimson spots, the outer surface, especially of the lower half of the lateral sepals, having a creamy or greenish tinge; *petals* obovate-cuneate, about an inch long and nearly as much in breadth, white with minute rosy dots near the base; *lip* with an incurved terete claw, which is white with rosy dots, two blunt obovate-oblong lateral lobes, which are yellowish-white spotted with purplish crimson, white and spotless at the tip partially spotted at the posterior side, and a front lobe which from a narrow base expands into a roundish rhomboid limb, yellowish white spotted with purple-crimson, the front part narrowed, and divided beyond into a pair of falcate recurved arms, which are broadish in the central part but narrowed to a point; between the lateral lobes are two flat oblong-cuneate crests, which are bright yellow spotted with red, and form a conspicuous part of the flower. *Column* about half an inch long, terete, with two incurved lateral lobes on each side the stigma, and an acuminate rostellum lying between them.

Phalænopsis Stuartiana, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xvi., 748, 753, fig. 140; *T. Moore, Florist and Pomologist*, 1882, 49, t. 559; *Hooker fil.*, *Botanical Magazine*, t. 6622; *Williams, Orchid-Grower's Manual*, 6 ed., 537.

The species of *Phalænopsis* here figured is a most distinct one and well worthy of extensive cultivation, for its white and spotted flowers produce a fine contrast, and its graceful branching inflorescence has a pleasing effect, so that it is really a valuable addition to the genus. The plant was introduced by the Messrs. Low & Co., of Clapton, and was named in compliment to Mr. Stuart Low, who has been the means of securing for our English cultivators many fine species of Orchids, in great quantity. There are several varieties of *P. Stuartiana*. Our drawing was taken from a very fine specimen which carried a branched spike three feet in length, bearing thirty-three expanded flowers of good size, and well coloured. This

was bloomed during the present year in the well-managed collection of C. J. Partington, Esq., Heaton House, Cheshunt.

Phalænopsis Stuartiana is a compact evergreen species, which has the foliage beautifully spotted while young, the spotting being nearly lost as the leaves attain maturity. It is a very distinct and lovely species, resembling *P. Schilleriana* both in its growth and in the shape of its blossoms. The flowers are produced in branching panicles, too large to permit of their being fully represented in our illustration; they are about two inches across, and have anchor-like tips to the lip, as seen in *P. Schilleriana.* The rhomboid petals and oblong upper sepals are pure white, the lateral sepals are white on the upper half and a very pale sulphur on the lower side where they are thickly spotted with cinnamon-red, as is also the central part of the lip, which has a white edge and white horns. It blooms during the winter months and continues in beauty for several weeks. The species has been introduced from Tropical Asia.

Phalænopsids of all kinds are well grown by Mr. Searing, the gardener at Heaton House. They bloom there most profusely, and have fine robust foliage. There is a house devoted to their accommodation. Some of the plants are cultivated in pans, others in pots on the shelves, while some are suspended in baskets from the roof, and in the winter season, when we saw them, their spikes of blossom were in great perfection, producing at that dreary time of year an effect which was extremely gratifying, and which was due to the mauve and white flowers of such kinds as *P. Schilleriana, P. grandiflora, P. amabilis, P. Stuartiana, P. Sanderiana,* and others being intermixed. Mr. Searing grows his plants in sphagnum moss, with good drainage, and gives a moderate supply of water at all times, never allowing them too much nor giving them too little. If they are ever over watered the moisture should be allowed to pass away quickly, so that it does not become stagnant. Good fresh compost or potting material must be made use of when it is required, as there are no Orchids so impatient of bad material being retained about their roots. This must be removed from them carefully, so as not to injure the roots. Decayed baskets are deleterious to them, and often cause the plants to get into an unhealthy condition, which it usually takes a long time to remedy. They require shading from the sun, or the foliage will suffer, as it is of a thick and sappy nature. Should any further information be required as to the treatment of these plants our readers will do well to refer to our *Orchid-Grower's Manual* (6 ed.), where we have treated on their requirements at considerable length.

P. Stuartiana has the peculiarity of producing young plants from its roots. We first saw this phenomenon in a specimen in the collection of W. McDonald, Esq., Woodlands, Perth; in this case there were a number of small plants on the roots, which looked at first sight like seedlings, but upon examination they proved to be offsets from the roots. These offsets may be taken off and potted, and with due care the species may thus be increased.

SACCOLABIUM BLUMEI RUSSELIANUM.

[Plate 238.]

Native of Java.

Epiphytal. *Stems* short, erect, bearing a dense close-set tuft of foliage, and stout terete fleshy roots. *Leaves* persistent, arcuate, channelled, distichous, elongate-lorate, unequally truncate at the apex, of a deep green colour, marked on the under side with parallel lines of deeper green. *Scapes* axillary, bearing long pendulous massive cylindrical racemes or spikes densely packed with prettily marked flowers, the inflorescence often two feet in length, the rachis bright green. *Flowers* comparatively large, very numerous, forming a crowded plume-like raceme; *sepals* ovate-oblong, incurved, blunt, white, beautifully marked with transverse dots of magenta purple; *petals* rather smaller and more oblong, but of nearly the same size and form, and also similar in colour and marking; *lip* with a roundish-oblong recurved elbowed limb, which is emarginate at the tip, costate, somewhat concave above, of a soft magenta purple, just tipped with white, and having at the base a compressed bluntish spur, pubescent within. *Column* short, beaked.

Saccolabium Blumei Russelianum, *Williams, Orchid-Grower's Manual*, 6 ed., 564.

This remarkably handsome genus is a special favourite with some growers, but it should, we think, be an universal favourite, at least with those persons who admire Nature's productions, as there are no Orchids that have a more handsome and telling appearance when grown and flowered in perfection. We have seen them exhibited in great beauty, for example, *S. guttatum*, with twenty or more racemes hanging gracefully among the foliage; even a few spikes of these picturesque flowers on a well-managed plant produce a handsome and noble appearance. In some collections we meet with vigorous healthy plants, and where that is the case they are much prized by those who possess them.

The group we now illustrate by a figure of *Saccolabium Blumei Russelianum* is a most charming one. The present is indeed a most wonderful variety, and was sold by us to R. H. Measures, Esq., of Streatham, who flowered it finely last year; and it is from this plant that our drawing was prepared. The small sketch shows the length of the spikes, which measured twenty-four inches, and as may well be imagined had a most beautiful appearance. It is a very rare plant, and was first bloomed by the late J. Russel, Esq., of Falkirk, N.B., in whose honour it was named.

Saccolabium Blumei Russelianum is a plant of compact evergreen habit with dark green foliage and long massive flower spikes, the blossoms being large and densely packed in the spikes; the sepals and petals are white tinged with rose and finely

spotted with magenta purple, and the lip is more heavily marked with the same rich colour. The blossoms are produced during August and September, and they will last three weeks in beauty. This specimen was grown in a basket with sphagnum moss and well drained, and had not too much material placed about the roots.

These plants are found growing on trees in their native country, so that their roots are not confined, but grow as they please, clinging to the branches and thus obtaining the full benefit of the atmospheric heat and moisture, as well as of the rains and heavy dews. In the dry season they are thus sufficiently provided with moisture during the night. In the wet season they commence growing and flowering, and at that period they get a large amount of rain, which is beneficial to them, being provided by Nature for their sustenance. We should try to imitate these climatic conditions as nearly as possible, by growing them in baskets with as little material about them as possible, and then their roots will have a chance to grow outside the material, suspended in the house where they will derive a good deal of nourishment for their roots and foliage. This is much better than giving them too much water directly. The material should be kept a little moist during the resting time, and even in the growing season too much water would be injurious. No doubt many plants are lost through careless treatment, such as giving water at an improper time. They require most careful attention, with the heat of the warmest end of the East India house. The glass must be shaded from the hot sun, as we have so often recommended. These plants frequently get injured by bad usage, when cleaned by persons who do not understand their requirements, for if the foliage gets bruised it will often rot, and will certainly disfigure the plant, which is very distasteful to those who like perfect specimens.

ODONTOGLOSSUM VEXILLARIUM.—At the second summer show of the Royal Botanic Society held in June this year, a wonderful specimen of *Odontoglossum vexillarium* was exhibited by Mr. James Douglas, gardener to Francis Whitbourn, Esq., Great Gearies, Ilford. The plant was about three feet in diameter, and bore forty-seven spikes supporting two hundred and ninety (290) flowers. This plant was a marvel of cultivation, and we must congratulate Mr. Douglas on his success in the cultivation of this section of Odontoglossums. This same gentleman also exhibited at the first summer show some fine examples of *Odontoglossum Roezlii*, cultivated in the same successful style.—H. W.

LÆLIA ALBIDA BELLA.

[Plate 239.]

Native of Mexico.

Epiphytal. *Pseudobulbs* ovate, clustered, becoming furrowed in age, and marked about the middle part with a transverse ring or scar, indicating the base of one of the deciduous ovate acuminate whitish bracts or scales, with which they are invested in the earlier stages of their growth. *Leaves* in pairs, narrow-lanceolate acute, channelled down the centre, stout and leathery in texture, and of a deep green colour. *Scapes* terminal, slender, two or three times as long as the leaves, and bearing several flowers in a longish raceme. *Flowers* two and three quarter inches across, distinctly and pleasingly coloured, having a powerful and peculiarly pleasant primrose-like perfume; *sepals* oblong-lanceolate acute, plane, spreading, of a creamy-white colour; *petals* oblong-ovate obtuse, three-fourths of an inch broad, creamy-white, with the margins near the front broadly but faintly bordered with pale peach-blossom or lilacy-pink; *lip* obovate emarginate, three-lobed, the lateral lobes erect, triangular-oblong obtuse, white streaked below with pink, the broad flat roundish-oblong front lobe white, bearing on the disk a crest of three yellow ridges passing from the throat outwards, and having a broad band of deep bright rose at the margin, this marking being very conspicuous and effective. *Column* elongate, glabrous, incurved, tinted with pink.

Lælia albida bella, *of gardens; Williams, Orchid-Grower's Manual*, 6 ed., 348.

In our third volume, Plate 138, we have figured the original *Lælia albida*, and we now introduce to our readers the more novel *Lælia albida bella*, from Mexico, which is a very pretty form of the species, varying from the type both in size and colour. When well grown and bloomed it makes a charming decorative plant during the autumn and winter months. It belongs to the section of small-growing Lælias, and is one that does not occupy much space. Our drawing was taken from a specimen in the collection of J. C. Bowring, Esq., Forest Farm, Windsor, who is a great lover of Orchids.

Lælia albida bella is an evergreen plant resembling the type in its growth and manner of blooming, but producing stronger flower spikes and larger blossoms than the original form of the species. The sepals and petals are creamy white, tipped with rosy lilac; the lip is yellow with a broad band of rosy magenta round the middle lobe, and an orange and yellow throat. It blooms in December and January, and lasts for several weeks in beauty.

This class of Lælias cannot be kept so long as others in a healthy vigorous condition, but require replenishing every few years, as they often grow and flower themselves to death, unless great care is bestowed upon them, and even then they

will dwindle away in time. They are often brought home in abundance by our collectors, and sold cheap.

We find the best method of cultivation is to place them on blocks of wood or in baskets in the Mexican house, using rough fibrous peat and live sphagnum moss, with plenty of drainage. They require but little potting material about their roots, but should have a liberal supply of water during their growing season, and when the growth is perfected just enough to keep them in a plump state. They flower after their growth is completed. These plants require all the light possible, and they will stand a good deal of sun, but should have a slight shading during the hottest part of the day. They are best suspended from the roof at about a foot or eighteen inches from the glass. In their native country they are exposed to strong light, and yet get free circulation of air, which they enjoy, together with the moisture from rains and dews which helps to support them.

Orchid Requirements.—South America is no doubt a fine field for Orchid explorers. Many fine things are found in Brazil, such as Cattleyas, Lælias, Oncidiums, and others. Here the temperature varies according to the locality and the position in which the plants are located. We may learn a good deal from persons who have traversed these countries, but that is of no use unless we put the information thus obtained to practical use at home. Mexico, Guatemala, Peru, and New Grenada are extraordinary countries for cool Orchids. The climate varies very much according to the elevation of the mountainous districts, where the Odontoglots and other cool species abound. In the low-lands the temperatures are different from those of the mountainous parts; these must be studied, and the requirements of the species that grow in the different positions must be found out. Trees are often found covered with several species of different kinds, and it might be supposed these would all require the same treatment, but when we get them under cultivation it will most likely be found that they must have different positions in the house, one species having grown on the shady side of the tree, and another on the side that is exposed to the sun. When we receive imported plants we try them in different aspects and different houses, and we find there is an extraordinary difference in the progress of the plants.—B. S. W.

J.Nugent Fitch. del et lith.

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ONCIDIUM MARSHALLIANUM.

ONCIDIUM MARSHALLIANUM.

[PLATE 240.]

Native of Brazil.

Epiphytal. *Pseudobulbs* ovoid-cylindrical, terete, furrowed, two to four inches long. *Leaves* oblong-lanceolate acute, six to eight inches long, channelled, of a bright green above, paler beneath. *Scapes* radical, supporting a very large, broad, much-branched panicle, the rachis green. *Flowers* large and very numerous, on longish slender green pedicels, brilliantly coloured; *sepals* small, obovate, apiculate, concave, the dorsal one about one-third of an inch long, the lateral ones connate, oblong, placed behind the lip, greenish yellow, covered by a series of transverse bars of deep chestnut-brown; *petals* stalked, fiddle-shaped, the border undulately, crisped, the apex bilobed, and the surface bright golden yellow, the disk spotted with spots or blotches of chestnut-brown; *lip* very large, narrowed at the base into a distinct claw, which is auricled, the auricles oblong-obtuse, ascending, yellow spotted as is the claw with crimson-red; behind the claw is seated a tuberculate beaked callus; the broad expanded limb is transversely oblong, deeply two-lobed at the apex, plane, and of a clear bright yellow colour. *Column* dwarf, with small quadrate wings.

ONCIDIUM MARSHALLIANUM, *Reichenbach fil.*, in *Gardeners' Chronicle*, 1866, p. 682; *Hooker fil.*, *Botanical Magazine*, t. 5725; *Gartenflora*, t. 979; *Floral Magazine*, 2 *ser.*, t. 285.

This fine Brazilian Oncidium is without doubt one of the most brilliant and showy of Orchids, its branching infloresence of large-sized bright yellow flowers being very effective in a group. It is of graceful habit, and makes a grand plant for decorative purposes; indeed, no collection should be without several plants of it, as they produce such a fine effect when overhanging other kinds of Orchids. There are varieties of this plant which differ in size and colour, some having larger flowers, others having stronger flower spikes, but all this greatly depends on the strength of the plant. Our energetic collectors are annually sending home large importations, which are required, as they have such free blooming propensities that the plants get exhausted, unless they have great care bestowed on them. The form we now figure is the ordinary one, showing a small part of one of its panicles. The sketch reproduced in our illustration was taken in the Victoria and Paradise Nurseries, where we have had several large specimens flowering in great perfection during the present year.

Oncidium Marshallianum is a fine evergreen species, and is certainly one of the most useful of Oncids. The pseudobulbs are ovoid-cylindrical, two to four inches in length, and bearing at their apex a pair of coriaceous oblong-lanceolate

acute leaves, six or seven inches long and two broad, of a bright green colour on the upper surface, paler underneath. The large flowers are produced on branching panicles, and are of a brilliant colour; the sepals are small, the dorsal one yellow banded with dull purple; the petals are an inch long, of a deep golden yellow colour, with irregular chestnut-brown blotches along the centre; the lip is large, flat, transversely oblong, and of a golden yellow colour. It blooms during the spring months and lasts some time in beauty.

The subject before us is a cool-house Orchid, which makes it the more valuable, as everyone can grow it that has a cool house. It will thrive at the warmest end of the Odontoglossum house, and will do well in small baskets with broken crocks and a little live sphagnum moss; the roots will protrude and cling to the wood where they seem to appreciate the moisture that rises. The water given to them should pass off freely, and never be allowed to become stagnant. Good fresh material should always be kept about their roots. The plants should be encouraged to make strong growths, as they are of such a free-blooming habit that they frequently get exhausted in their flowering season, and their bulbs will sometimes shrivel through bearing large panicles of flowers. After their blooming is over, start them into growth by giving them moisture to plump up their bulbs and foliage. They are best kept moist at the roots during their flowering season, and during their resting season there should always be sufficient moisture to maintain them in a plump condition.

We also find them do well on rafts of teak wood without any moss or soil about them. When planted on these they require more attention as to the artificial supply of moisture, but very little shade. They are best suspended near the glass, as they require a good light to ripen their bulbs and perfect the strong growth which is considered necessary. Insects must be destroyed promptly. The white scale sometimes makes its appearance, and may frequently be seen on imported plants, which should always be well looked over on their arrival, and thoroughly cleansed.